

VOL. VIII.

Building Materials

CHICAGO, ILL., DECEMBER 22, 1908.

No. 6.

No. 18 Gates

Built By

Largest Receiving Opening

of any Breaker ever Built

Capable of Receiving Pieces as Large as can be Economi= cally Handled, thereby Sav= ing Drilling and Blasting and Entirely Eliminating Hand Sledging

has been in Continuous Successful Operation All Year at Michigan Alkali Co.'s Plant at Alpena, Mich. Write for Further Particulars.

This Breaker

CAPACITY, 800 TONS

Complete Equipments

for Rock Crushing Plants

The following Cement Companies advertising in this paper are users of the

"BATES SYSTEM"

OF PACKING

Bonner Portland Cement Co.
Castalia Portland Cement Co.
Dexter Portland Cement Co.
Edison Portland Cement Co.
Fredonia Portland Cement Co.
Ironton Portland Cement Co.
Newaygo Portland Cement Co.
Penn-Allen Portland Cement Co.
Superior Portland Cement Co.
United Kansas Portland Cement Co.

WRITE US

BATES VALVE BAG COMPANY

CLEVELAND, OHIO

All Steel Contains Manganese

There is no copyright on the term "Manganese Steel," therefore, any Steel may be called Manganese Steel

TISCO Manganese Steel is a patented product, and is the standard. The trade-mark "TISCO" is copyrighted. Therefore, any other steel that may be offered as Manganese Steel, will be an imitation depending on the reputation of TISCO Manganese Steel for its sale.

Taylor Iron & Steel Company

High Bridge, N. J.



CHARLES L. JOHNSON

Sales Manager

Castalia. - - Ohio

High Tensile Strength Light Uniform Color FINELY GROUND

Castalia Portland Cement Co. PITTSBURG. PENNSYLVANIA

Plant: Castalia, Erie County, Ohio

Capacity: 2,000 Barrels Daily



Vol. VIII.

CHICAGO, ILL., DECEMBER 22, 1908.

No. 6.

CAROLINA PORTLAND CEMENT COMPANY

We are the largest distributers of Portland Cement. Lime Plaster, Fire-brick and General Building Material in the Southern States, and have stocks of Standard Brands at all of the Atlantic and Gulf Seaports, and at our interior mills and warehouses, for prompt and economical distribution to all Southern territory. Write for our delivered prices anywhere. Also Southern agents for the "Dehydratine's" waterproofing material. "Universal," "Acme" and "Electroid" Brands Ready Roofing. Get our prices.

Charleston, S. C.

Birmingham, Ala.

Atlanta, Ga.

New Orleans, La.



UNION MINING COMPAN

FIRE BRICK

GOVERNMENT STANDARD

Lime Kiln and Cement Kiln Construction

Large stock carried. Prompt shipments made. Write for quotations on Standard and Special shapes, to

UNION MINING CO., Mount Savage, Md.

CAPACITY, 60,000 PER DAY, ESTABLISHED 1841,

Digging Cement Rock Without Blasting

for less than 12c per cubic yard. That's what the Burt Portland Cement Co., Bellevue, Mich., are doing with a Vulcan Steam Shovel. ASK US TO SHOW YOU.

The Vulcan Steam Shovel Co. 129 VULCAN PLACE TOLEDO, OHIO



Phoenix Portland Cement UNEXCELLED FOR

PHOENIX CEMENT CO.

NAZARETH, PA. Sole Selling Agent WM: G. HARTRANFT CEMENT CO., Real Estate Trust Building PHILADELPHIA, PENNSYLVANIA

MEACHAM & WRIGHT COMPANY CEMENT

CHICAGO

Ottawa Silica Co.'s Washed White Flint Sand

Is used for sawing stone in more than a dozen states. Cuts more and lasts longer than any other sand on the market. Unexcelled for Roofing, Facing Cement Blocks, White Plaster, etc. Freight rates and prices on application.

OTTAWA SILICA CO., . .



BEST BELT FOR GRIFFIN, TUBE AND BALL MILLS

Chicago Belting

CHICAGO, PHILADELPHIA, PORTLAND, ORE., NEW ORLEANS.

MAKERS OF Leather Belting

BEST BELT FOR DAMP **PLACES**



Missourl

ALMA Portland Cement

STANDARD BRAND MIDDLE WEST.

Specially adapted to all Reinforced Concrete and High-Class Work.

Alma Cement Co. WELLSTON, OHIO.

Special Features in This Number.

Annual Meeting of the American Association of Portland Cement Manufacturers.

Detailed Announcements of Cement Users Convention in Cleveland, Chicago, Minneapolis, Des Moines, Lincoln and elsewhere. Standard Specifications Adopted by the Manufacturers of Sand-Lime Brick.

Rocky River Bridge, near Cleveland, Ohio, Being Built of Mass Concrete.

Plaster Novelties-A Unique Feature that Shows Wonderful Interest of the Public in Such Fantasies.

"GOLD MEDAL"

MANUFACTURED BY

Illinois Powder Mfg. Co.

Security Bldg.

BLASTING POWDER

AND

BLASTING SUPPLIES

Quick Shipments Lowest Prices



A PERFECT RECORD FOR TEN YEARS

IN ALL KINDS OF CONCRETE WORK

Send for 72 page Illustrated Catalog No. 25

MARQUETTE CEMENT MANUFACTURING CO.

Marquette Building, Chicago





ATRADE-MARK

Peninsular Portland Cement

Acknowledged by competent Architects and Engineers to be unequaled for fineness, wonderful development of strength and sand carrying capacity.

"THE BEST IS THE CHEAPEST"

Address Peninsular Portland Cement Co. Jackson, Michigan

Red Ring Portland Cement



Manufacturers: Sales Office Liggett Bldg.

St. Louis



Write for Catalogue

High Tensile Strength, Finely Ground, Light and Uniform in Color. MANUFACTURED BY THE

Lehigh Portland Cement Co.

ALLENTOWN. PA

Western Office: 725 Rockefeller Bldg. CLEVELAND, OHIO

Capacity, 8,000,000 Yearly.



OUALITY THEN OUANTITY

OUR MOTTO

WRITE FOR PRICES

The Fredonia Portland Cement Co.

FREDONIA, KANSAS



Strength Uniformity Satisfaction

A Dependable Portland Cement

An Unblemished Record for six years speaks for itself

Wolverine Portland Cement Company

Coldwater, Michigan

C. H. WOOD, Agent, Chamber of Commerce Building, Chicago

ONE GRADE-ONE BRAND



Alpha Portland Cement

The Recognized Standard American Brand

General Offices: EASTON, PA.

SALES OFFICES:

German National Bk. Bidg., PITTSBURGH. Builders Exchange, BUFFALO Builders Exchange, BALTIMORE. Marquette Building, CHICAGO. Harrison Building, PHILADELPHIA

Board of Trade Bldg., BOSTON St. Paul Bldg., NEW YORK. Nat'l Bank Bldg., SAVANNAH, QA.



CHICAGO

"AA"

1,000,000 Barrels Annually

Highest Quality

THE BEST THAT CAN BE MADE

Factory at Oglesby, near La Salle, Ill.

MANUFACTURED BY

CHICAGO PORTLAND CEMENT CO.

No. 108 La Salle Street, CHICAGO, ILL.

HYDRATED PORTLAND



IS IDEAL FOR

Waterproofing Concrete Blocks

SAVES MONEY, TRY IT.

FOR INFORMATION AND PRICES, WRITE-

KAMAUGA CEMENT CO.,

Sole Manufacturers.

CHATTANOOGA, TENNESSEE







Volume VIII.

CHICAGO, ILL., DEGEMBER 22, 1908.

Number 6.

THE LARGEST CONCRETE ARCH EVER BUILT

Will Span Rocky River Gorge on the Western Boundary of the City of Cleveland and Will Cost Over Two Hundred Thousand Dollars.

Cleveland, Ohio, is to have a gigantic reinforced bridge with the largest concrete arch ever built. It will be forty-seven feet longer than the main arch of the Walnut Lane bridge at Philadelphia, which holds all records to this time.

The great structure is to span the Rocky River gorge on the western boundary of the city of Cleveland. Travelers from the West to the great Ohio metropolis will remember crossing a deep ravine through which a river flows on its way to the lake just before they reach Cleveland. It is this great gorge that is to be spanned with concrete masonry.

The entire length of the bridge will be 708 feet. It will have a forty-foot roadway and eight-foot sidewalks on each side. The main span is to be 280 feet in length as against 233 feet in the Walnut Lane

bridge.

The new bridge is being built by Schillinger Brothers, of Columbus, their bid of \$208,302 being the lowest of seven received, and \$45,318 under the estimated cost of the structure by County Engineer A. B. Lea, who, with his chief assistant, A. M. Felgate, designed the bridge. Several score of workmen have been busy for weeks cutting down the timber from the banks where the bridge will rest and digging out the soil where the abutments will rest. It was necessary to go down many feet to the solid shale to get a proper foundation for the footings.

There are to be many unique features about this great bridge.

great bridge.



A. B. LEA, COUNTY ENGINEER, CLEVELAND, O.

Early next spring the contractors will begin setting eir falsework for the central span. This, accord-

ing to the specifications, must be of steel. The top of the arch is 100 feet above the surface of the water, and being 280 feet in length one can imagine the engineering difficulties to be encountered and solved.

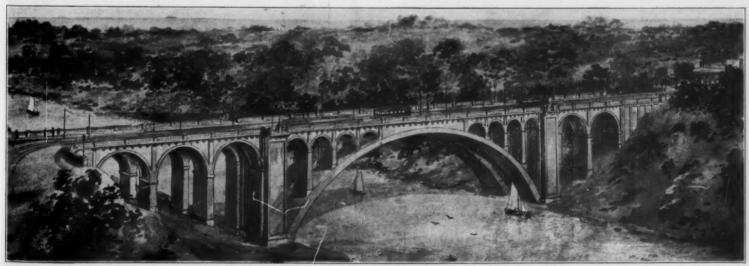
The new bridge will be built ten feet to the north The new bridge will be built ten feet to the north of the present steel structure, which may be removed when the new one is finished. It is possible that the steel bridge will remain standing and be sold to the traction companies, who will repair it for their use. It has been condemned several times. In the spring of the year it is subject to terriffic strain as the great ice floes come down the gorge on their way to Lake Erie. It is a distinct compliment to concrete that it has been chosen in preference to steel for this important work. important work.

The main arch is to be divided longitudinally into two ribs, each eighteen feet wide transversely. Steel rails are to be embedded in concrete for use in future years if necessary. No wood will be used, even the ties being of steel. The main roadway across the bridge will be paved with brick, concrete being brought to sub-grade and a one-fourth inch coat of asphalt being used before the bricks are set.

asphalt being used before the bricks are set.

Standard engineering practice has been adhered to in the designing of the approaches. The main arch and the centering for its erection, together with the two main piers, will require especial care. Careful calculations have been made, both graphically and analytically, and the best engineering science has been resorted to in determining stresses. Diagrams and computations have been checked by alternative methods, and those figures have been referred to

(Continued on page 46.)



ROCKY RIVER BRIDGE, NEAR CLEVELAND, BEING CONSTRUCTED BY SCHILLINGER BROTHERS, CONTRACTORS, OF COLUMBUS, O.

Can Be Used With Absolute Safety



Hundreds of users have testified to the excellent results obtained.

Manufactured and Guaranteed byl

Omega Portland Cement Company

Jonesville, Michigan

CAPACITY 700,000 BARRELS ANNUALLY

OFFICE ALLENTOWN, PA.



STANDARD SPECIFICA-TIONS GUARANTEED

Newaygo Portland Cement Co.

Sales Office: Michigan Trust Building

GRAND RAPIDS, MICH.

Write us for prices. Send us your orders.



Pennsylvania Portland

Stands for Quality





CEMENT PLANT CHANUTE, KAN.

> Daily Capacity 2500 Barrels



ASH GROVE LIME & PORTLAND CEMENT CO. KANSAS CITY. MO.

MAKER OF

Ash Grove Portland Cement

High Grade White Lime

WE FURNISH "Unbustible" Steel Hoop Barrels



LIME WORKS

Ash Grove Galloway Everton Carthage Greenfield



Daily Capacity 2500 Barrels



Medusa Water-Proof Compound

Makes all Concrete Watertight

The foundations and floor in basement, all of cement, in the Bostwick-Braun warehouse, Toledo, O., here illustrated, contain Medusa. Write for pamphlet describing its use.



Write for samples of our Pure White Portland Cement.

Do not accept a substitute, as there are many adulterated compounds on the market.

Sandusky Portland Cement Co.

SANDUSKY, OHIO

Edison's "Poured" Concrete House

We invite you to visit our Exhibit at the

Cement Show

Cleveland, Ohio

where sample castings of the famous

"Edison Concrete House"

will be on exhibition.

Edison are but Portland Cement

is fast being preferred by the leading architects, engineers, contractors and builders all over the country for its Fine-

ness, Color Uniformity, Soundness and Sandcarrying Capacity. The anchorage of the Manhattan Suspension Bridge, the Bridge Loop connecting Brooklyn and Williamsburg Bridges, New Brooklyn Dry Dock No. 4, Bronx

Storm Relief Tunnel Sewer, New York City; U. S. Navy Yard, Portsmouth, N. H.; Filtration Plants, McKeesport, Pa. and Philadelphia, Pa.; Sea Wall, North River, N. Y.; are a few of the many construction works of importance into which "EDISON" is going.

85% thru 200-98% thru 100

Every barrel of "EDISON" guaranteed to pass standard specifications.

Edison Portland Cement Company

NEW YORK St. James Bldg. PHILADELPHIA Arcade Bldg. PITTSBURG Machesney Bldg. BOSTON
Post Office Square Bldg.

NEWARK, N. J.

SAVANNAH National Bank Bldg.



Strength Durability Permanence

Not only laboratory tests, but results in actual work prove the high grade quality of

Northampton Portland Cement

Especially adapted for Cement Blocks, Sidewalks and all forms of concrete and re-inforced concrete construction.

Northampton Portland Cement Co.

Main Office and Works Stockertown, Pa.



CONCRETE SEWER. WILMINGTON, DEL. 1800 feet 36" diameter; 1300 ft. 30" diameter

ALEXANDER J. TAYLOR, Engineer

Nazareth Portland Cement

CHARLES WARNER COMPANY

Executive Offices, Wilmington, Del.

Land Title Building Philadelphia 1 Madison Avenue New York 161 Devonshire Street Boston

The Quality that Never Fails

SUNFLOWER

PORTLAND CEMENT

Three Great Plants, at IOLA and INDEPENDENCE, KANSAS, making Perfect Cement, with Unsurpassed Shipping Facilities, Guarantee Prompt Service.

YOUR CEMENT NEEDS CAN BE SUPPLIED EFFICIENTLY

Daily Capacity of 8,000 Barrels. Write today to

United Kansas Portland Cement Company

General Sales Office: 811 Commerce Building, KANSAS CITY, MO.

The Ironton Portland Cement Co.

Manufacturers of the

Celebrated Limestone Brand of Portland Cemen

Used by the Raliroads in Kentucky, Ohio, West Virginia, and Virginia during the past five years. Cement as finely ground as any on the market, Guaranteed to pass all the standard specifica-

Plant located at Ironton, O., within easy access to seven States, namely, Ohio, Indiana, Kentucky, West Virginia, Virginia, Tennessee and North Carolina.

Shipments via the N. & W. Ry., C. & O. Ry., C. H. & D. Ry., D. T. & I. Ry. or Ohio River.

Write for Prices

The Ironton Portland Cement Co.

Fitnt Pebbles and Buhr Stone

French Buhr Mill Stones,

J. M. Charles,

Sole Agent.

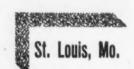
59 Pearl St., NEW YORK, N. Y.

Bolting Cloths, Dufour Swiss Silk, Fine Wire Cloth. Mixing and Sifting

CHARLES W. GOETZ LIME & CEMENT CO.

MARUFACTURERS OF AND DEALERS IN

Glenwood Lime, Banner Brand Louisville Cement, Portland Cements and Building Materials.



FOWLER & PAY,

Brown Hydraulic Lime, Austin Hydraulic Cement, Jasper Wall Plaster, Brick. Stone.

CEMENT WORKS: Austin, Minn. PLASTER MILL: Pt. Dodge, Iowa. WARFHOUSE: Minnesota Transfer MANKATO, MINN.



"CONTINENTAL" DUMP CARS

Our Dump Cars are used on most of the large rock and dirt moving operations throughout the United States and Canada.

Continental Car and Equipment Co.

Works; Highland Park, Louisville, Ky. New York, 17 Battery Place

Tell 'em you saw it in ROCK PRODUCTS.



The Lake City Queen Concrete Mixer



Combines the best features of all the others and has none of their faults. The ideal concrete mixer at last. Accurate in proportion. Light running and especially adapted for mixing concrete where it is necessary to use it in large quantities. Has a capacity of two

hundred and fifty sacks of cement in ten hours making a one to four mix.

The Best Continuous Mixer on the Market

This mixer is made mounted for portable work and on skids for stationary work.

THERE is a large profit to be made in manufacturing cement drain tile. If you are interested drop us a line. We have a cement drain tile machine that is automatic and rapid and has a capacity of four thousand or more tile per day. Write for particulars.

Electrical Cement Post Co. Lake City, Iowa

Manufacturers of

Concrete Mixers Cement Block Machines Cement Drain Tile Machines

Hand Tile Molds, Post Molds, Etc.

Send for Prices



IT OUT FIGURE

EALERS sell Amatite Roofing with their lead pencils. They can prove every time to the hesitating customer that a roofing of Amatite's great weight, at Amatite's low price, with Amatite's "no paint" mineral surface is cheaper in the beginning and cheaper in the end than any kind of painted roofing.

It's a matter of cold figures—cold facts. The dealer doesn't have to argue; he only fills out an estimate and lays it before the doubter side by side with the estimate for the

roofing that is going to demand painting every year or two and won't last as long as Amatite

Amatite needs no painting.
The mineral surface is better-more permanent than many coats of paint and more satisfactory. The dealer that likes to "stand behind his goods" will be proud of the service Amatite gives. And we, in turn, "stand behind" the dealer, with the biggest advertising campaign in the roofing trade.

Barrett Manufacturing Company

New York

Chicago

Cincinnati

Philadelphia Kansas City

Boston Minneapolis

St. Louis New Orleans Cleveland London, Eng.

Pittsburg

Western Lime & Cement Co. Pabst Building, Milwaukee, Wis.

Largest Manulacturers of Magnesian White Lime in the Uniulacturers of Magnesian White Lime in the Uni-

Retailers and Wholesale Distributors of LIMATE, CEMENTS, STUCCO LANDPLASTER, PLASTERING HAIR, FIRE BRICK, CLAY PRODUCTS, ETC.

Wisconsin White Lime DAILY CAPACITY 10,000 BBLS.

LIME WORKS AT Oshkosh, Clifton, Grimms, Knowles, Hayton, Brillion, Sherwood Sheboygan, Eden, (Marble Head,) Hamilton, Mayville, Valders

ALLIED HOUSES AT Chicago, Oshkosh St. Paul

O. W. ROBERTSON, Pres., Milwaukee A. T. HOWE, Vice-Pres., Chicago R. C. BROWN, See'y, Oshkosh CHAS. WEILER, Treas., Milwaukee



MITCHELL LIME

Is Chemically Pure and Practically Free from Waste

The Strongest White Lime on the Market. Used and recommended by Sand-Lime Brick Manufacturers. Chemists. Soap and Glue Works, Plasterers and Masons.

Prices Cheerfully Submitted

Mitchell Lime Company

INDIANA MITCHELL,

The Kelley Island Lime and Transport Co.

CLEVELAND, OHIO.

Tiger Brand White Rock Finish the best known and smoothest working Hydrated Lime manufactured.

WRITE FOR PRICES

THE LARGEST LIME MANUFACTURERS IN THE WORLD.

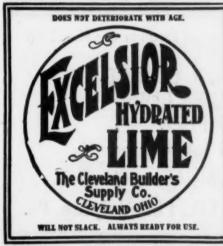
The Ohio and Western Lime Company

WORKS AT
Huntington, Indiana
Marion, O.
Gibsonburg, Ohio
Fostoria, Ohio
Sugar Ridge, Ohio
Tiffin, Ohio
Genoa, Ohio
Limestone, Ohio
Lime City, Ohio
Portage, Ohio
Luckey, Ohio
Bedford, Ind.

MANUFACTURERS OF AND WHOLESALE DEALERS IN

Ohio White Finishing Lime, Ground Lime, Lump Lime, Fertilizer, Hydrate Lime, Cement, Plaster, Hair, Etc., Etc. Capacity 8000 Barrels Per Day

MAIN OFFICE: Huntington, Ind. Branch Offices: Marion, O. and Toledo, O., 209-210 Chamber of Commerce Bldg.



Excelsior Hydrated Lime

A PRODUCT OF MERIT.

The best prepared Lime in the market. Is superior to hot Lime for all purposes. Will not deteriorate. Absolutely pure and free from foreign ingredients. Successfully used for years by the largest users of Hydrate in the country.

SEND FOR PRICES.

The Cleveland Builders Supply Co. Cleveland, O.

Try us on your Portland Cement requirements

HIGH CALCIUM HYDRATE

The Best for Every Purpose where Chemically Pure Lime Is the Indispensable Element

Sand Lime Brick Difficulties can be Simplified 'and Overcome by the use of our Correctly Hydrated Lime.

Cement Blocks can be made more waterproof, cheaper, and of lighter color by the use of from 20 to 40% of pure hydrate free from magnesia. This substitutes the same amount of cement and does not impair the strength of the block.

Water Softening and Filtration in municipal and industrial plants. Our hydrate increases the efficiency of operation, enables exact determination and offers numerous economical advantages.

Commercial and chemical requirements call for pure lime. We furnish a product of 98% analysis.

Kansas City MARBLEHEAD LIME CO.

Chicago

HIGH GRADE

Cement Works, Lime Kilns, Cupolas, Steel and

Louisville Fire Brick Works.

K. B. GRAHN, Prop., Highland Park, Ky., P. O.

Hand Made - Hard Burnt

are the best for-Lime and Cement Kilns

Mitchell Clay Mfg. Co.

St. Louis, Mo.

CATALOG



The Buckeye Fire Clay Co.

Manufacturers of

Sewer Pipe, Flue Linings, Chimney Tops, Fire Brick, Grate Tile, Ground Fire Clay, Wall Coping, Etc.

UHRICHSVILLE, .. OHIO

Burton Powder Co.

Good Luck Dynamite



Blasting Powder

Dynamite Factory:

Powder Mill:

New Castle, Pa.

Quaker Falls, Pa.

Main Office, PITTSBURGH, PA.



Some of the advantages of Producer Gas Fired Lime Kilns are:

> LARGER OUTPUT CLEANER LIME LESS FUEL LESS LABOR

If interested write for special circular.

R. D. Wood & CO., Philadelphia, Pa.

PATENT SOAPSTONE FINISH

PLAIN AND IN COLORS FOR WALLS AND CEILINGS

Patent Soapstone Mortar

Prepared in any Color for Laying Pressed and Enameled Brick, Stone Fronts, Terra Cotta, Chimneys, Fire Places, Etc.

The Dodge Blackboard Material or Artificial Slate.

The Potter Blackboard Material.

SOAPSTONE MICA. CONCRETE DRESSING. CRUSHED, GROUND AND BOLTED SOAPSTONE.

AMERICAN SOAPSTONE FINISH CO DODGE, Proprietor.

CHESTER DEPOT, VT,

Farnam "Cheshire" Lime Co.

OF CHESHIRE, MASS. MANUFACTURERS OF THE

Celebrated Cheshire "Finishing" Lime

Well known throughout New York and the Eastern States as the finest finishing lime manufactured. The special feature of this lime is its quick and even slacking, thus preventing any cracking or checking when put on the wall. It is the best lime used in the country today for all

HIGH GRADE FINISHING WORK

Selling Department, 39 Cortlandt St., N. Y., C. J. CURTIN, Pres't.

Tell 'em you saw it in ROCK PRODUCTS.







AETNA DYNAMITE

The Standard Explosive Always Full Strength Always the Same

Send for new 66 page Blasting Manual

MADE BY

THE AETNA POWDER COMPANY

143 DEARBORN STREET, CHICAGO

Bank of Commerce Building ST, LOUIS, MO. CHATTANOOGA, TENN. XENIA, OHIO Woodward Building BIRMINGHAM, ALA.



The Clyde Hydrator

is the accepted standard of highest efficiency, economical operation, positive results and general all around serviceability in hydrating machinery

There are more of them in use than all others put together

They have proven their merit under all conditions
We will furnish full information,
booklets and interesting data on
vour request

"We like to answer questions"

CLYDE IRON WORKS

Manufacturers

DULUTH, MINN.
Tell 'em vor saw it in ROCK PRODUCTS.

The MOST MODERN and BEST EQUIPPED FACTORY in EX-ISTENCE. Steel Building. Motor Driven Machinery. Absolutely Fireproof.



HIGH

BRICK

prices

because

they pro-

secured with no

other material.

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that can be

OUALITY

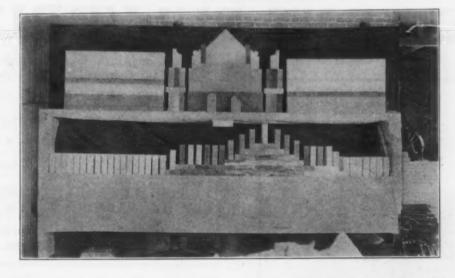
bring top

Factory built by us for The CRANFORD PAVING CO., Washington, D. C.

This factory pronounced a MODEL PLANT by visiting delegates of the convention of the National Association of Manufacturers of Sand-Lime Products after inspection, on December 16th, 1908.

THE PRODUCT HIGH GRADE BRICK and BLOCKS

Manufactured with less labor than common brick



WATCH
THIS
SPACE
next month
for the
most
Convincing,
Practical
Exhibit
of the use of
Perfect
Sand-Lime
Brick.

Interested parties can obtain a permit from us to inspect the above factory, examine the machinery, process and product "DIVISION METHOD" Patented in United States and all other countries

International Sand-Lime Brick & Machinery Co.

90 West Street,

NEW YORK

The "Berg Press" is the Highest Development in the Art of Brick Making Machinery, so Pronounced by the United States Government

Highest Grade

BRICK MACHINERY

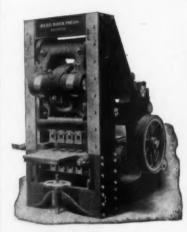
and Equipment

FOR.

SAND-LIME, SAND-CEMENT FIRE-BRICK, CLAY and SHALE

Each system we guarantee are unequaled and further advanced than any others

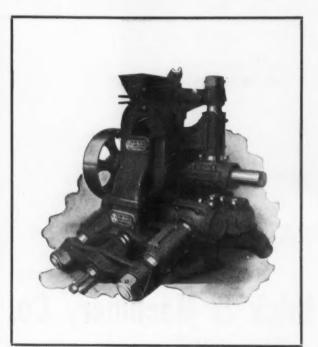
Cement Machinery Mining Machinery Engines and Boilers



BERG FOUR MOLD PRESS. Highest Efficiency Guaranteed.

The Berg Machinery Manufacturing Co., Ltd.

THE KENT PULVERIZER



Takes one inch feed. Grinds to any fineness from 10 to 200 mesh.

GRINDS PER HOUR WITH LESS THAN 25 H. P.

CEMENT CLINKER, 40 bbls. to 98% 20 Mesh.
CEMENT CLINKER, 12 " "96% 100 "
LIMESTONE, 2½ tons to 98% 200 "
LIME, 4 " " 100 "
ROSENDALE CEMENT, 43 bbls. " 90% 50 "
QUARTZ TRAP-ROCK, 4 tons " " 40 "

You can easily figure from this what a Kent Mill would save for you.

W. J. Bell, Esq., Supt.
Newaygo Portland Cement Co.,
Newaygo, Mich.
Says:—Four KENT MILLS are driven by one 75 H.P. motor

For Catalogs and Information, Address

KENT MILL CO. LONDON W. C. 31 High Holborn 170 Broadway, NEW YORK Schiffabuerdamm 29

Tell 'em you saw it in ROCK PRODUCTS.

The Bradley Producer

Gas Process for Burning Lime.

Four and three quarter pounds of lime to one pound of coal on a large output is now being secured every day.

Does that look like economy to you?

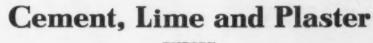
=RESULTS GUARANTEED=

Duff Patents Company Frick Building Pittsburg, Pa.

It will pay you to use

The JAITE PAPER SACKS

FOR



EMBODY

Strength and Flexibility

DO NOT BECOME HARD AND BRITTLE—AS THEY ARE MADE RIGHT FROM START TO FINISH

Have that LEATHERY FEEL which makes it easy to tie.

We solicit your orders, knowing that once a customer, always a customer.



THE JAITE COMPANY

BOSTON. SUMMIT COUNTY. OHIO



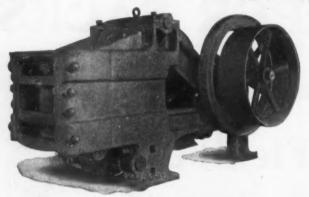
ENTERPRISE PLASTER MIXER

NOISELESS, DURABLE and EFFICIENT.

For Mixing Hair Fibre, Wood Fibre and Retarder with Dry Plastering Materials.

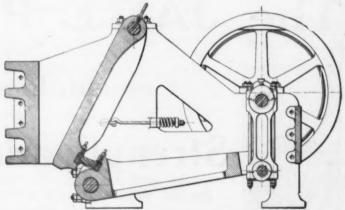
Calcining Kettles

Jaw and Rotary Crushers for Gypsum, Reels, Vibratory Screens, Hair Pickers and Transmission for applying power.



EHRSAM NO. 4 JAW CRUSHER.

This machine will handle large chunks and reduce from 30 to 40 tons of Gypsum per hour to 2½-inch maximum or smaller it wanted.



NO. 4 JAW CRUSHER, SHOWING SECTIONAL VIEW OF NIPPER.
The jaw opening at inlet is (\$2.28 inches

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Portland Cement

ON THE

Illinois Central Railroad

IN THE

WEST AND SOUTH

Coal, Water and Good Labor

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IRONTON CROWN.



LIME KILN LININGS.

GROUND CLAY
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Austin, Western and Aurora Jaw
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DEVOTED TO CONCRETE AND MANUFACTURED BUILDING MATERIALS.

Volume VIII.

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Number 6.

THE FRANCIS PUBLISHING COMPANY

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BERNARD L. MCNULTY.

Communications on subjects of interest to any branch of the stone industry are solicited, and will be paid for if available.

Every reader is invited to make the office of Rock Products his headquarters while in Chicago. Editorial and advertising copy should reach this office at least five days preceding publication date.

Entered as second-class matter July 2, 1907, at the Postoffice at Chicago, Illinois, under Act of March 3, 1879

An effort has been made by lime manufacturers to prevent the tariff being reduced or taken off lime from Canada.

Heavy purchases of materials in the early months of next year may be the means of making money before the Fourth of July.

The opening up of the internal waterways, by Congress appropriating money in bonds and the States following suit and doing their part, will mean a harvest for the building material and constructing trades.

With the banks full of money and the corncribs full of corn, the railroads are purchasing and planning for the renewal of equipment that will put them on a working basis, and the stone crusher and dirt mover will get his inning in 1909.

Sand and gravel operations with improved equipments are making good profits wherever the basic materials are right. Washed gravel and clean sand find a ready market wherever offered. The economy of equipment is indispensable, however.

The all-important matter of equipment is uppermost now in the minds of the manufacturers of materials. Mechanical economies are the most satisfying investments because they eliminate that always unknown quantity—the human equation.

Standard specifications for building brick, which is a certainty for the near future, will mean the elimination of quite a lot of very low grade brick now in use. They never should have been allowed, and better brick is a good competitor for any material.

The subject of raw material should be studied from the standpoint of getting the most out of it, so that our government will not need to pass laws in future that we may be hindered, if not prevented, from using everything but the "squeal" as we go along.

The rock crusher operators, who are the nation's road builders, are taking no little interest in the development of the concrete road proposi-They have long since learned to use the concrete culvert and retaining wall, and they are growing members in the cement users class.

A writer in a contemporary magazine says "the upward turn is due." We beg to recommend for his consideration that it has arrived! Not in great force, perhaps, nor have we recovered from the demoralization that over-production generally brought on, but as long as we are all satisfied that the war is over, it means we are getting busy.

Hydrated lime, the one grand improvement of that most venerable industry, has won its way upon merit in all of the principal markets, and the end is not yet, for it is still gaining ground and will continue to do so until it will be known in no other merchantable form. Being a new thing, some of the plants are not able to observe any signal success, but such are always found to be local or individual difficulties and will be overcome when the right path is struck in each case.

The retailers and distributers of building supplies are out with saw and hatchet to mend their fences for the campaign of 1909. There will be many a business alliance formed at the Louisville convention of the National Builders Supply Association in February and before. If ever there will be a time for the manufacturers of standard goods and specialties to place their announcements before the readers of Rock Prop-UCTS, that time is now. Don't be misled, we know whereof we speak, and cordially invite the progressive ones to get into our January number, with the assurance that we know exactly where the papers are going to do the work. A word to the wise, etc.

Cement users are looking with interest to the announcements of the annual conventions of the various organizations dedicated to the great work of promoting the introduction and use of concrete construction. It is gratifying to observe that the campaign we inaugurated more than two years ago for the use of concrete in street and road building is bearing fruit. Not only is this true with regard to the growing amount of this kind of work being done, but its very satisfactory character as well. The safe schoolhouse for cities, the secure barn for the farmer, and the sane home for the family have also made great progress. Rock Products readers are the first to attend the conventions, and more, first to put into practice the progressive lessons to be found on such occasions. Their success in business to no small extent is attributable to the convention

The joyous Christmas tide is in the air. It is the season when we practice the most divine suggestion in the whole makeup of human beings. The stern responsibilities of life and ambition are laid aside during the most important festival of the Christian world-and of our type of civilization as well. We voluntarily transform ourselves back to childhood's ways, so that the little children lead us in very fact like the great Master said. It is a holy season, because when we become as little children the immortal goodness that is a part of the mysterious life principle predominates and we have innate joy, spontaneous sacrifice, beatitude. Who shall deny us this one purifying occasion, and who is so low that he cannot feel the thrill of love-life-childlike, of the Christmas tide. The high and mighty, the weak and lowly, rich, poor—may every human creature know or feel the sweetness of this holiday season as the only visible expression of achievement of our Christian civilization.

The best fire protection is to use materials that will not burn while the factory, the schoolhouse, the barn or the home are under construction. This applies to the floors, the roof and the stairways as well as to the walls. It is clearly of little advantage to build a non-inflammable shell and fill it up with tinder in the shape of wooden joists, floors and roof The o'er worn excuse of precedent and cost can no longer construction. be sustained. It has been a bad precedent, no one who ever observed the statistics of fire losses would care to contradict this. The cost problem has been taken care of by modern applied science, so that extra expenses of really fire resisting construction can be eliminated in almost any locality. If this seems to be untrue in the place where you or those you know expect to build next year ROCK PRODUCTS would like to hear about it. We may be in a position to help you directly with such a prob-



What Is the Blasting Limit?

In another column is recited an extraordinary movement of cement rock in the quarries of the Pennsylvania Cement Company, of Bath, Pa., in which they state they shoot down 75,000 tons of rock with about seven tons of dynamite, an amount which is about twice as much as is usual, the ordinary run being about 28,000 tons of rock at a blast, allowing about a pound of powder to two or three tons of rock

A number of unusual blasts like the above-named A number of unusual blasts like the above-named have lately been reported, and a representative of Rock Products accordingly interviewed several experts on the matter, who say that it seems to be the craze just now to make these enormous blasts, then take the material through a number of necessary subsequent processes to get the big pieces of rock down to proper condition, the larger ones often having to be reblasted, sometimes coming out as large as a house. This of course can be obviated by attempting to This, of course, can be obviated by attempting to take out less at a time, and it is a mooted question which is the more economical.

take out less at a time, and it is a mooted question which is the more economical.

John O'Laughlin, of Racine, is now drilling holes 112 feet deep, while J. & A. C. O'Laughlin, of Bellwood, are figuring on doing the same. The Lehigh Portland Cement Company, at Mitchell, Ind., have been drilling holes sixty feet deep for a year.

People in the Chicago district seem to believe in drilling a great many holes and using a great deal of powder, thereby saving sledging and blockholing. However, there are those who seriously object to this heavy blasting within the city boundaries, on account of its effects on outside property. They claim that some of the companies are going beyond safe limits, and there is just now considerable agitation of measures to limit blasting to 1,000 pounds to the shot in such territory. Of course the big Panama disaster, which occurred the other day, when fifty holes were drilled and ten people killed, besides a number injured, will be cited by them as strong evidence.

This newest innovation in deep drilling has come about from the fact that when steam was used, as formerly, the iron drill, if sunk too deep in the rock, became too heavy for the power to withdraw. However, it was discovered that by the use of the Keystone well drill a much greater depth can be penetrated with success.

trated with success

"Too Much Ambish"

One of our Italian friends had a fuss with his neighbor in the banana business, and his cart was upset. Thereupon he called up the police station and delivered himself of the above remark. And that is what troubles many of our friends in the building material trade, both manufacturer and

the building material trade, both manufacturer and retailer. Rock Products would be the last paper to discourage ambition, but where it acts as a retarder to the general improvement of business in an industry, it is needless to say that we recommend some sort of a substitute for this aggrandizement, which is more necessary in 1909 than it has been for some time, owing to the over-capacity—and that is more intelligent selections.

time, owing to the over-capacity—and that is more intelligent salesmanship.

The demoralization in several of our largest industries and the absolute elimination of profit in some of our largest markets will be remedied if more intelligent salesmanship, which means first "get together" between yourselves, is used in the conduct of the business for 1909.

View of the Government Forester.

Gifford Pinchot, chief forester of the United States, recently said:

States, recently said:

"The forest service is watching with a great deal of interest the increasing use of cement and other substitutes for wood. They are undoubtedly having some influence on the price of lumber, though I do not think that, up to the present time, they have greatly retarded the advance in lumber prices. The fact is that our industrial progress has been so great that our requirements for every kind of structural material have increased tremendously. We are using, at the present time, more lumber per capita than ever before and probably twice as much per capita as we did fifty years ago. The conclusion can not be escaped, therefore, that in the future, we must depend more than in the past on other materials than wood for certain purposes at least. As to the increase that will take place in

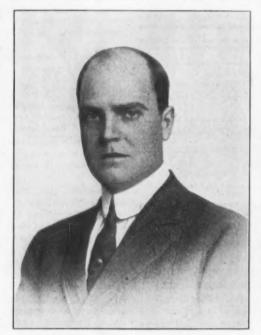
the production of cement, my impression is that this will be very great."

If the increase in the use of cement in the United States in past years is to be regarded as any index to its future use, the conclusions of the forester well founded.

C. H. Claibourne, of the Union Mining Company, Mount Savage, Md., was in the West recently looking up the firebrick trade and remarks that wonderful improvements are to be noted in the way the buyers take hold of business propositions now. In fact, it seems that everybody is sitting up and taking

J. C. Van Doorn, northwestern sales agent of the Universal Portland Cement Company, and also the secretary of the Northwestern Cement Users' Assosecretary of the Northwestern Cement Users' Association, took a week off to go deer hunting in the northern woods recently. This was immediately previous to Thanksgiving, and since there has been no wide distribution of venison with Van's compliments, we are led to believe there is a scarcity of wild deer in the forests, for on former occasions there has been no discount on the game that comes in the range of Van's firing line.

L. M. Palmer, Jr., of the Palmer Lime and Cement Company, New York, was seen the other day en route to Hot Springs, where he has gone to recuperate. He



E. J. DOWDALL, IOWA AND NEBRASKA REPRE-SENTATIVE OF THE UNIVERSAL PORTLAND CEMENT COMPANY

reports business very quiet in the East, although their splendidly equipped plants are prepared to do a large business in 1909. He could see some good prospects for a large volume and they are prepared to take

C. S. Hurlburt, of the Bostwick Steel Lathe Company, Niles, Ohio, was a visitor at St. Louis and Kansas City this past month.

We dropped into the office of Gordon Willis, president of the National Builders' Supply Association and vice-president of the Hunkins-Willis Lime and Cement Company. He reported the year's business as quiet and active only as far as volume is concerned, but, unfortunately, owing to very keen competition, prices were very much demoralized in staples and building material lines in St. Louis. Being specialists, however, their company has been able to do a splenhowever, their company has been able to do a splendid volume along other lines, and he looks forward to a very much bettered condition in 1909. F. P. Hunkins, president of the company, was also present and he was very enthusiastic over the product of their new lime plant, which has made quite a name for itself since it was put on the market.

Gordon Willis, in speaking of the National Builders' Supply Association, remarked that secretaries Wardrop and West had been very active and there are an unusually large number of new members coming in. The association bids fair to make greater strides in increased membership from this time forth. Quite a little interest had been taken by both dealer and manufacturer in the coming meeting at Louisville, for which a splendid program is being prepared.

The large roof garden on the Seelbach Hotel will be utilized for exhibits by specialists in the building material lines. This will no doubt increase the number of customers for the manufacturer and give the retailer new ideas as to additional lines, which means added profit and increased business

A. H. Lauman, of the National Mortar Supply A. H. Lauman, of the National Mortar Supply Company, Pittsburg, Pa., was a recent New York visitor. He viewed the sights of the great white way in company with H. B. Hobart and William Kind, who are connected with the New York sales department of the United States Gypsum Company. 'Tis said they all had a very good time.

Lawrence Hitchcock, of the Kelly Island Lime and Transport Company, has been going over the situ-ation at the New York end of that company's ex-tensive operations with Harry Brocas, the head of the New York offices.

Ambrose Tomkins, of the supply firm of Tomkins Brothers, Newark, N. J., is a firm believer in the good results of cooperative effort amongst the regood results of cooperative effort amongst the re-tailers of supplies. He is a charter member of the New Jersey State Association and says that he will not miss the Louisville convention in February, be-cause he thinks that the National Association is in-dispensable as the central head for the lesser organi-zations, such as the one that he belongs to in New

Lovell H. Carr is one of the oldest salesmen of Portland cement in the business. He has long been connected with the Alpha Company, but in recent years has been connected with the New York office of his concern in the St. Paul Building. During the convention of Sewer Pipe Distributors in the metropolish there was a manufacture of the Alpha office and of his concern in the St. Paul Building. During the convention of Sewer Pipe Distributors in the metropolis there was a man called at the Alpha office and asked to see Mr. Carr. The man was of distinguished appearance, and from appearances was certainly in a great rush. Mr. Carr could not be seen instantly, but when it was reported that a foreigner from the old sod was on hand who wanted a hundred thousand barrels of cement for South Africa, delivered alongside in the harbor of New York as quickly as lighters could put it on, there was some commotion, and Mr. Carr proceeded to get very busy. He adjusted his spectacles on his nose and snatched the tariff sheets and the warehouse reports to see how much of this stock was instantly available, and never did he recognize Joe Degnan until they came to adjust the matter of settlement in pounds and shillings and pence. Then it became apparent that neither of the gentlemen knew how many shillings it takes to make a guinea. Of course, Mr. Carr refused to sell cement to a man who did not know how to count money, and then there was a hearty recognition and a prolonged chat about the old days when American-made Portland cement was first being introduced in the Toledo district, when neither Mr. Carr nor Mr. Degnan could find a gray hair amongst the sable locks that once adorned their wise old heads.

E. J. Sigwalt, who has been with the Universal

E. J. Sigwalt, who has been with the Universal Porland Cement Company's sales department for the past two years, has severed his connection with this firm on account of ill health. He is compelled to seek milder and more equable climate.

E. J. Dowdall, whose handsome countenance adorns this page, is another one of the Universal boys, who have made good in large numbers. Up to a year ago he was the commercial agent for the Illinois Central Railroad at St. Louis, Mo., where he was born. His territory for the Universal is Western Iowa and Eastern Nebraska. He makes his headquarters in Omaha, where he spends a great deal of his time. Of course, it is delicately intimated by his friends that a very sweet young lady lives in Omaha, but that is, of course, merely incidental. Mr. Dowdall has the faculty of making friends readily and, what is more to the point, holding them after he has made them. He is a jolly good fellow and very popular with the trade, who look forward with interest to his coming visits. The Universal Portland Cement Company has no more able representative on its roster than E. J. Dowdall, and the success of their brand in this territory is largely due to his splendid efforts. E. J. Dowdall, whose handsome countenance adorns tory is largely due to his splendid efforts.

Al. Gallagher, of the Ohio and Binns Retarder Company, Port Clinton, O., was in Chicago the other day and reported, while the Caarina was out of commission, these would be busy days for him in telling the plaster trade of the merits of the O. & B. retarder.

We wish all our subscribers and prospective advertisers—especially the latter—would read a letter from the Eastwick Plaster Company, of Philadelphia, reproduced on page 76 of this issue; for if anyone has heretofore hesitated about placing an ad with us we believe that this ought to settle the matter in our favor without further question.

plies at Wilkesbarre, Pa., says he has had a fairly good year in every line of supplies with the exception of sewer pipe, and in this he has been somewhat of a specialist in Wilkesbarre and the surrounding territory. He observes that there was a period in the middle of the summer when little or no concrete work was being done, but toward the close of the season, his establishment was as busy as possible, and they even used some extra teams. In the cement line, he handles principally Giant and Atlas. handles principally Giant and Atlas.

Charles L. Johnson, the genial secretary of the Sales Managers' branch of the Portland Cement Association, says that he is going to get the distribution for every barrel that the Castalia can make this next year in spite of the fact that a new mill is going up right in the immediate neighborhood.

Charlie enjoys the distinction of having been recently appointed by the governor of Ohio as commissioner of the Insane Asylum at Toledo. He is careful to state it just this way, and might be offended if anyone was to say that he was an insane commissioner. Nevertheless, he has his patients at Toledo in mind all the while and "Jerry" Kendall says that Charlie's being on the board is what accounts for so much concrete improvement being put in around the place. There has been considerable concrete work at the great state institution, and probably Amos has place. There has been considerable concrete work at the great state institution, and probably Amos has furnished some of the cement, although it is certain that Joe Degnan would put in a few barrels of Tiger from Charlie's Castalia plant just to show his good will, for Charlie is popular with the retailers, and this popularity has been well deserved.

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W. E. Cobean succeeds Charles H. Wood as general sales agent of the Wolverine Portland cement. Mr. Cobean has been connected with the company for five years and has traveled the states of Indiana, Ohio and Michigan. He is well acquainted with the retail trade in that section and his customers will be very much pleased to hear of his advancement. Mr. Cobean is thirty-seven years old and was born at Lima, Ohio. He is one of the quiet unassuming men of the business, but with a very pleasing personality. One of those fellows who doesn't say much, but what he says, counts. He is well posted on the cement conditions and best of all is thoroughly in touch with his customers and his company. No man is better fitted to take up the position of sales manager of this well known brand of cement than is Mr. Cobean, for close application to his work has developed in him the complete knowledge of his position.

Charles C. Kritzer, the famous hydrating specialist, recently observed that the sales of hydrated lime during the present season amounted to at least double that sold in any former year. In many cases where he had made inquiry, the hydrating department has been the only busy part of the plant, this year. Another thing every man who is operating a hydrating plant considers it the best part of the business, and they all consider it the branch with an especially bright and glowing future.

A. E. Preuss, he of the fedora hat, well known as the sales manager of the Utica cement, recently met one of his old time customers in Chicago, who in the days of yore, was a prominent contractor, but now retired. The ancient contractor asked, "What is the matter with Utica cement? Why isn't it used as much as formerly? Have you let the quality run down or what?"

Mr. Preuss, with a characteristic shrug, replied, "There is nothing the matter with Utica cement. It is in fact better than ever, as we use greater care in its manufacture and with the improvement in grinding machinery, a better and more uniform product is produced than ever before."

"What is it then?"

"Simply this that, with the advent of domestic

"What is it then?"

"Simply this that, with the advent of domestic Portland cement, the manufacturers of the new product went after the business with characteristic American energy and through their extensive force of salesmen, which were thrown into the field, a Portland cement sentiment was worked up to such an extent that the people were literally carried off their feet so that they forgot all about any other cement, past and present. We claim for Utica cement without the chance of contradiction, that when used alone and tempered with water, it makes the best brick and stone mortar that is to be found in the world. It has been used in some of the most magnificent structures and has proven its durability, for it has been on the market for seventy years. Present indications go to show that it will be in the market another seventy years, and then some."

Two of the stalwart sales managers of the United States Gypsum Company, William Shearer, of Cleveland, and F. W. Farrington, of Minneapolis, were in

Chicago the other day. These gentlemen were in conference with President Avery and Vice-President Fulton, to look over the 1909 field. They reported a better volume of business for 1908 than they had anticipated early in the season, although they have constantly endeavored to keep their sales force on the firing line all the year, and the prestige of Universal and other brands of the company has grown. As an illustration, Mr. Farrington said: "We have two new hotels in the Twin Cities, costing a million each. The Hotel Minneapolis will be reinforced concrete and twelve stories high. Adamant plaster is being used. The same figures apply to the Hotel St. Paul, which will also be plastered with Adamant. Another good job in which Adamant was used this year was a twelve-story addition to the Hotel Baltimore, of Kansas City. It is said—but not above a whisper—that Shearer has landed the Pennsylvania Terminal at New York City for United States Gypsum goods. If he doesn't it will be because it is nailed down and the spikes clinched.

One of the new wrinkles at the United States Gypsum Company's office is the organization of the Business Extension Club, which will include ninety representatives of the company located in all parts of the United States. Special sessions will be held at various meetings of the trade during 1909.

F. L. Kane, the new manager of the Sackett

F. L. Kane, the new manager of the Sackett Plaster Board Company, New York, was in Chicago, going over his plans with the companies handling Sackett board from their new board mill at Cayuga, N. Y., where they will put up a factory a quarter



W. E. COBEAN, GENERAL SALES AGENT, WOLVER-INE PORTLAND CEMENT CO.

of a mile long and 100 feet wide. Another plant will be constructed at Okarche, Okla. Speaking of busi-ness conditions, Mr. Kane said: "The Sackett board has made leaps and bounds in prestige this year, not-withstanding dull conditions, and it looks like we will furnish the board for the earth one of these days."

Charles O'Donnell, of Bellefontaine, Ohio, of the Buckeye Portland Cement Company, dropped into Chicago the other day and said he had been resting quite a while now, owing to dull conditions in cement, not having any strong desire to make cement at less than cost.

W. B. Hill, president of the Ash Grove Lime and Cement Company, of Kansas City and Chanute, Kan., reports that the Ash Grove brand is making great progress. Being ground to exactly the right fineness it is making a great hit for all classes of construction

The Lawrence Portland Cement Company has arranged with their agents, the Cleveland Macadam Company, to have an exhibit at the National Cement Users Show at Cleveland, of their Dragon brand of cement. It will be in charge of W. P. Hurst, the active salesman of the Cleveland Macadam Company

who has handled this established brand for some time

Geo. E. Nicholson and B. E. Allison, of the United Kansas Portland Cement Company, Kansas City, dropped into Chicago the other day to visit some of their customers, and look forward to a big production and a large volume of business in 1909. Not but what there is need for it, but the splendid success of the Sunflower and Iola brands has made it possible to go into every bailiwick in the Southwest. The splendid equipment of this company's plants makes it possible for them to give splendid service. They have been illustrating, in a little pamphlet on bridges, how successful their brands have been in the country.

B. C. Steece, of the Ironton Portland Cement Com-pany, Ironton, O., is looking with satisfaction on the turning out of the old year and coming in of the new, for he believes it means better conditions in the cement trade.

H. B. Warner, of the Maryland Portland Cement Company, Baltimore, visited his old home in Chicago the past month and reported their new plant at Hagerstown was turning out a high grade of cement, which was particularly pleasing to the contractor because of the splendid materials and their splendid because of the spiendid materials and their spiendid equipment which makes their cement the best. He predicts that the new year will mean greater pros-perity for the company. Harry was once very much at home in the East, but he has a mighty warm spot in his heart for old Chicago.

In remodeling or constructing its station buildings the Wabash Railway Company is now using concrete entirely. The architecture is of the Mission type, so generally adopted in Mexico and in the Southern States. Some of the station buildings have steel and others wooden frames, but the structure, including the roof, walls, floor and platform, is of concrete. It is quite plain this material makes for solid and substitution buildings, and it is also claimed by sanitarians that they are less difficult to keep clean than are wooden structures. Being fireproof, there is alight danger from that source. They are cool in the summer and very easily warmed in the winter, the thick walls operating to exclude the cold. Scarcity of timber has caused the railroad companies to turn to other materials than wood for building. So fast as new depots are required or old ones to be rebuilt, the Wabash will have recourse to concrete.

November Building Statistics.

November Building Statistics.

Building operations at the present time, as shown by reports gathered from several sources, are much more active than at this time in 1907 or 1906. In eight representative cities the cost of building in November, 1908, and November, 1906, shows an increase of \$13,258,040. This increase seems almost incredible, being 42 per cent greater.

The reports on forty-two cities by the American Contractor show eight where the value of the buildings authorized in November, 1908, was below the value for the same month last year. Gains are reported for all the principal cities, with the few exceptions noted, ranging from 3 to 394 per cent, the latter being Chicago's remarkable record.

latter being Chicag			-Cost-	
City—	1908.		1907.	1906.
Atlanta		- 8	374,388	
Baltimore			354,945	505,231
	601,180		146,408	133,280
Birmingham	666,000		826,000	548,500
Buffalo			2,205,150	4,615,300
Chicago	10,897,850			808,027
Cleveland	899,624		870,318 536,298	393,300
Cincinnati	935,625			142,732
Dallas	222,055		128,624	15,700
Davenport	74,800		14,900	458,155
Denver	548,200		345,355	
Detroit	1,045,100		1,408,450	722,200
Duluth	161,555		56,055	132,586
Grand Rapids	167,239		139,387	178,694
Hartford	219,693		76,940	219,885
Indianapolis	270,557		163,415	434,197
Kansas City	632,655		591,280	496,810
Louisville	217,454		55,458	159,725
Milwaukee	1,321,239		1,119,887	925,242
Memphis	128,943		311,704	308,610
Mobile	113,390		30,461	23,090
New Orleans	260.128		151,741	222,280
New York	16,080,607		7,465,170	11,467,089
Manhattan	6,705,424			4.564,775
Brooklyn	4,890,508			4,894,489
Bronx	4,484,675			2,007,825
Omaha	420,135		381,765	357,175
Philadelphia	2,316,590		1.083,025	2.013,615
Paterson	195,890		99,717	118,749
	1.859,092		813,001	1,062,992
Pittsburg	417,108		344,260	393,290
Rochester	910.135		683,366	586,780
St. Paul	1.366,511		789,186	2,351,071
St. Louis	133,605		216,113	154,812
Scranton			171,575	252,515
Spokane	473,805		35,000	39,450
South Bend	16,789		150,250	171.915
Tacoma	296,108		200,200	1,276,985
Washington	903,826		396,783	204,285
Worcester	213,990		185,190	202,200
	2010 200	00	0.071 574	222 258 040

Totals\$45,813,495 \$20,671,574 \$32,258,040 Gain, \$13,555,455, or 42 per cent.

FROM OUR OWN **CORRESPONDENTS**

ST. LOUIS MO.

Sr. Louis, Mo., Dec. 19.—It is estimated that the idle money in St. Louis banks and trust companies now amounts to more than \$50,000,000. This does not include money in safe deposit vaults, and it is expected that during the coming year a considerable part of this large sum will be invested in real estate. With respect to residences, though there are approximately 200,000 houses and flats, the number of vacancies today does not aggregate 5,000. As it takes about 4,000 houses each year to supply the demand of the actual growth, and as the city has not annually of late years averaged 4,000, there is no danger at present of over-building, even if 1909 proves to be a year of great activity in the building line, and a large number of houses and flats should be erected. The Pemberton Investment Company, of which St. Louis, Mo., Dec. 19.-It is estimated that the

a large number of houses and flats should be erected. The Pemberton Investment Company, of which Zach Tinker is president, will erect on the corner of Seventh Street and Washington Avenue a ten-story fireproof commercial and office building, to cost \$200,000. Eames & Towne, the well known architects, are making the plans, and work will be begun February 1. It is to be of exceptionally handsome exterior, and in equipment will embody all new ideas in skyscraper building. It is to be of steel construction, and the front will be of red brick and terra cotta. The ground area is 50x150 feet.

The contract for the erection of the Soulard Branch Library, to occupy the corner of Seventh and Soulard Streets, has been awarded to J. W. Wilson & Son, whose bid of \$50.949 was the lowest. Hellmuth

Son, whose bid of \$50.949 was the lowest. Hellmuth & Spiering are the architects.

The work of checking up the plans for the City Hospital, recently submitted to President O'Rielly, of the Board of Public Improvements by Architect A. B. Groves, is practically completed, and an ordinance will be drafted next week authorizing the construction of the buildings, which the estimates show will cost about \$900,000. The plans call for four

struction of the buildings, which the estimates show will cost about \$900,000. The plans call for four buildings, completing the hospital group. The main building will be five stories in height. At each side of the big structure will be two hospital wings, each four stories, and directly back of the main or administrative building, will be a clinic building.

Architect A. F. Haeussier is preparing the plans for a new factory building to be erected on Laclede Avenue, near Sarah Street. The lot is 200x187 feet. The central portion of the building will be six stories high, crowned with two turrets, and the wings will each be three stories. The first two stories of the front will be constructed of Bedford stone and the balance brick, with terra cotta trimmings. The balance brick, with terra cotta trimmings. The structure will cost about \$125,000 and work is ex-pected to be begun on it February 1.

"The business done in lime during the year about to close," remarked Colonel Cobb, president of the Glencoe Lime and Cement Company, "has been fairly Glencoe Lime and Cement Company, "has been fairly satisfactory, especially so during the fall. We have also had a goodly share of the trade in Portland cement and have secured the contract for furnishing 25,000 barrels. Lehigh brand, for the new library building, for which the John Pierce Company are the general contractors." Colonel Cobb also stated he had just returned from a visit to Oklahoma and had found there was considerable buildingsing. had found there was considerable building going on in some of the principal cities, with a good prospect for activity in that line next year.

A large over-subscription for the bonds of the Union Sand and Material Company appeared when the subscription for the new issue closed on Monday. The bonds to the amount of \$400,000 at 6 per cent interest are issued for the purpose of acquiring and operating the plant of the Kansas City Portland Coment Company, located at Kansas City. The subscription reached \$1,200,000. The bonds are dated

ment Company, beat 200,000. The bonds are taken scription reached \$1,200,000. The bonds are taken February 1. 1909, and mature in ten years.

In reviewing their business year, Gordon Willis, of the Hunkins-Willis Lime and Cement Company, the had been better than they felt warranted to earlier mouths. of the Hunkins-Willis Lime and Cement Company, stated it had been better than they felt warranted in expecting from the outlook in the earlier months of 1908, and in volume it had proved to be quite large, but as is always the case in lean years, competition had been close and cut down margins. The sale of their specialties in the building line now practically covers the entire country, but in lime, cement and other heavy articles the territory is more restricted, owing to freights. They are running moderately their two lime plants and have had a good sale for Atlas Portland cement.

The Charles W. Goetz Lime and Cement Company consider the outlook for building operations in St. Louis and vicinity for 1909 to be very good, since be-

sides the activity in the building of residences, flats and apartment houses, together with business blocks and factories, there are to be several public buildings erected. The foundations of some large structures have only just been begun and consequently the building operations on these is pushed into the new year's account.

year's account.

Captain Clark, general sales department of the Continental Portland Cement Company, states that as is usually the case with a new plant slight changes have to be made before everything gets down to running smoothly, and these hindrances have prevented his booking as much business as was offered, if parties were in need of their orders being filled promptly. Having taken on over 2,000 barrels, in spite of these drawbacks, Captain Clark is looking for sufficient new business to come in to take up their increased output when the plant is being run more steadily.

The Universal Portland Cement Company, Ed.

The Universal Portland Cement Company, Ed. Quibbeman reports, has done a large business in St. Louis territory in 1908. At present there is the usual year-end slacking up, as the holidays and inventory taking always bring this about. The weather this season has been exceptionally favorable for building operations, sidewalks building and read for building operations, sidewalks building and road making, and the season has been open longer than usual. After the turn of the year the trade will

making, and the season has been open longer than usual. After the turn of the year the trade will begin to make their contracts for spring delivery and a lively demand is anticipated.

The Acme Cement Plaster Company find on going over their books that their sales for this year exceed those of 1907. Mr. Steeg, general manager of the sales department, attributes this in part to the company having a large country trade, with whom business runs very uniform from year to year, and to the fact that there is a steady increase in the consumption of hard wall plaster, particularly in large cities. In addition to this, the company has this year been operating some mills acquired by purchase, which has largely increased their total capacity. The most recent acquisition made by the company is the purchase of the plant and business of the Independent Gypsum Company, of Fort Dodge, Iowa, for \$150,000. The plant covers 100 acres and has an output of 300 barrels daily. The addition of this plant gives the company branches in nine districts, as follows: Palmdale, Cal.; Los Angeles, Cal.; Laramie, Wyo.; Acme, N. M.; Acme, Tex.; Cement, Okla.; Marlow, Okla.; Grand Rapids, Mich., and Fort Dodge, Iowa. The total output of the company now is 35,000 tons per month.

LOS ANGELES.

Los Angeles, Cal., Dec. 19.—During the month of November the Department of Buildings issued 585 permits, amounting to \$801,450. While this amount is very small in comparison with the building permits issued in November, 1906, it is a better showing than was made in November, 1907, and is far above that of October, 1908, and it is safe to say that the building permits for December will aggregate more than \$1,500,000.

The most important of the buildings in the course

The most important of the buildings in the course of erection at the present time is the ten-story building on the southeast corner of Sixth Street and Broadway, fronting 122 feet on Broadway and 150 feet on Sixth Street. The cost will be \$199,900. The

Broadway, fronting 122 feet on Broadway and 150 feet on Sixth Street. The cost will be \$199,900. The excavation has been completed and the contract for the erection let to Weymouth Crowell, who has also secured the contract for the \$250,000 building to be erected at the southwest corner of Sixth and Hill Streets. This new structure will add greatly to the citified appearance of South Hill Street, and will no doubt lead to construction of more fifeeproof office and business buildings in this part of the city.

The lime and stone dealers in Los Angeles state that business has picked up wonderfully since the political uncertainty has been disposed of.

F. O. Wyman, general manager of the Union Lime Company, states that their plant at Tehachapi is running night and day, and he looks for this state of affairs to last for some months. The freight rate from Tehachapi on lime was recently reduced from \$2.50 per ton to \$2.15 per ton, and this, in a measure, accounts for the large number of orders on hand.

Bids were recently opened for the construction of the new reinforced concrete bridge to be built across the Los Angeles River at the North Main Street crossing. The plans for the structure were made and the bridge designed by H. G. Parker, of the city bridge department. The bridge will have a total length, including abutments, of 363 feet. It will be 70.8 feet wide and have three spans 87.6 feet each. The construction of this bridge marks a new departure in the construction of reinforced concrete bridges, inasmuch as it will be the first to be constructed with The construction of this bridge marks a new departure in the construction of reinforced concrete bridges, inasmuch as it will be the first to be constructed with hinges, which are to be placed at the crown of the arches and near the pier heads, the object being to allow for expansion. The bridge will be of sufficient width for general street and railway traffic. It is estimated the cost will be approximately \$100,000.

The Los Angeles-Pacific Company is constructing a heavy concrete retaining wall at the north end of the tunnel, facing Sunset Boulevard, and is also ex-tending the brickwork at the Temple Street end about fifty feet southerly from the embankment where the bore came through. Double crossings are being made for placing in Temple Street, so that cars can be run through this tunnel and south to the point where the second tunnel will begin and grading is expected to begin very shortly.

It has been found necessary to reject the bids received for the construction of the quartermaster storehouse, which was to be of the reinforced concrete type and to be erected at Honolulu. The proposals received exceeded the estimate by \$20,000, the lowest bid being \$55,000 in amount. It has not been decided what action to take in the matter. It is possible the plans will be modified, in order to bring the proposals within the available funds.

The Acme Cement Plaster Company's Los Angeles mill is about to resume operations and will turn out hard wall plaster at the rate of 200 tons per day. This mill has been closed down since last March, owing to the inability of the company to secure a suitable gypsum deposit. During this time the mill has been thoroughly overhauled and new machinery installed to take the place of the old, and the cap has thereby been greatly increased. Plaster of stucco, molding and dental plaster, etc., will also be manufactured at this plant. A large and commodious retarder plant has been built at Los Angeles by the Acme Company and is now turning out high-grade retarder to supply the needs of the Pacific Coast plaster mills.

The Palmdale (Cal.) plant of this company has been in continual operation for the past year and is running to its full capacity, 250 tons per day. The gypsum is being hauled about four miles to the mill.

gypsum is being hauled about four miles to the mill.

The plant of the Alpine Plaster Company at Palmdale is running full blast and President Newby predicts a record-breaking output for the year.

The Scientific Machine Mixed Mortar Company, which closed its plant a short while ago, will resume operations under new management on and after December 25. Besides furnishing a high-grade of brick and plaster mortar they will also handle lime putty and roof gravel. The mortar plant is situated at Ninth Street and Santa Fe Railway tracks.

SOUTHERN CALIFORNIA CONSTRUCTION NOTES.

SOUTHERN CALIFORNIA CONSTRUCTION NOTES.

Concrete Pier, Venice.—Negotiations are under way for the construction of a municipal pier and railroad line over the Lorelei Avenue entrance to the Windward Avenue pier at Venice. It is proposed to build a concrete pier 1,000 feet beyond the end of the Kinney pier and breakwater. Its use will be largely for the conveyance of the outfall sewer of that place.

Ferry Building, San Diego.—It is announced that the San Diego & Coronado Ferry Company will build new ferry houses of reinforced concrete on both sides of the bay.

of the bay.

Building, Redlands.—H. P. D. Kingsbury and associates will soon commence the erection of a new manufacturing building for the making of preserved fruits. It will be of brick and reinforced concrete

Steel Bridges, San Bernardino.—The Charles Schee

Steel Bridges, San Bernardino.—The Charles Scheeley Company, of Denver, has been awarded the contract for the construction of three steel and reinforced concrete bridges by the County Board of Supervisors.

Concrete Pier, Santa Cruz.—The city is considering the matter of building a 2,000-foot pier. Colin H. McIsaac, secretary of the Santa Cruz Chamber of Commerce, has been in Santa Monica for the purpose of gathering data and information in connection with the reinforced concrete pier in course of construction at that point.

The rainforming steel for the eight-story rainforced.

The reinforcing steel for the eight-story reinforced The reinforcing steel for the eight-story reinforced concrete building to be erected at San Diego for the Timken estate has arrived, and no time will be lost in preparing it for use. The F. O. Engstrum Company, of Los Angeles, has the contract for the building. They have erected a high tower scaffold from which the concrete will be distributed to any desired point. The concrete is raised by means of an elevator to a bin at the top of the tower and from there it passes through an extended metal chute to the forms.

Plans are being prepared in the Bureau of Equipment, Navy Department, for a coal shed to be built at the naval coaling station at California City Point, Cal. It will be of steel and concrete construction, to cost about \$225,000, and of about 20,000 tons capacity. It will have an inclined floor so that coal may be spilled by gravity without the aid of machiner.

Plans have been prepared by Floyd G. Dessery for the improvement of Wilmington harbor in accordance with the issue of bonds authorized at a special elec-tion held several months ago. It is estimated that the whole amount of dredging will aggregate about 800,000 cubic yards. The channel will be nearly one mile long, 100 feet wide and eighteen feet deep at mean low tide. The city trustees of Wilmington are mean low tide. The city trustees of Wilmington are now asking for bids for this work, said bids to be ember 21.

opened December 21.

Sealed bids will be received by the Board of Supervisors, of Los Angeles County, for the furnishing of all labor and materials necessary for the construction of a reinforced concrete bridge over Santa Anita Wash, on White Oak Avenue, in the Lamanda Road District, Los Angeles County.

The contract for the construction complete of the postoffice building, at Santa Rosa, Cal., has been awarded to Hoyt Brothers, of Santa Rosa, at \$59,995; time, December 1, 1909.

The final award of the contract for the construction of a reservoir on University Heights, San Diego, has been made to Marshall, Brown & Gallagher, of San Diego, on their bid of \$97,713.91. The American Light and Water Company, of Los Angeles, submitted

has been made to say their bid of \$97,713.91. The American Light and Water Company, of Los Angeles, submitted a bid of \$97,444, but through an error in the certified check the city attorney decided against them.

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SAN FRANCISCO.

San Francisco, Cal., Dec. 15.—A general revival was looked for after the national election, but so far the situation in regard to building activities and the like on the Pacific Coast shows little improvement. Now the rainy season has set in, and work on most of the projects under way will be more or less hampered through the winter. The local building record for last month does not compare very favorably with that set in September, and the estimated value of buildings for which permits were issued shows of buildings for which permits were issued shows a decided falling off. There is still a very fair amount of business going on, however, and new work is being started at the rate of about half a million dollars a

The proportion of concrete construction seems to

week.

The proportion of concrete construction seems to be increasing somewhat, as work is shortly to be started on several good-sized buildings of reinforced concrete. This does not include the large amount of work that is now being done on municipal improvements, sewers, etc., and the construction of several new piers and docks, for which some large contracts for concrete and crushed rock are being let.

While no great increase of activity can be expected during the winter, the general feeling in the building line is good, and the outlook is highly encouraging. Money is still being held at high rates of interest, but several large loans have been secured lately, and the amount of new capital secured on mortgages is increasing all the time. Work has recently been resumed on several buildings which were held back by lack of funds and the reconstruction of at least three large structures which were partially destroyed by the fire is soon to begin.

Many new plans are announced, including several buildings of a large size, in spite of the predictions earlier in the fall that the bulk of construction for the next year would be on smaller buildings.

The situation in regard to materials shows little change, but the surplus is beginning to be cleaned up, and prices show signs of greater firmness. Common brick, in fact, has already begun to advance, being \$2 higher than at the beginning of October.

Plans for several hundred thousand dollars, have been received at the local army post, and bids will probably be received some time this month. It has

been received at the local army post, and bids will probably be received some time this month. It has not yet been decided whether they are to be of concrete or brick.

The State Harbor Commissioners have instructed The State Harbor Commissioners have instructed their engineer to prepare a plan and estimate the cost of an underground conduit large enough to accommodate all the wires of electric lighting, power, telephone and telegraph companies. The conduit is to extend on East Street, between Folsom and Vallejo extend on fast Street, between folsom and vallejo Streets, including all necessary crossings and exten-sions, manholes, approaches and connections. The object is to enable the corporations to lay their wires, etc., without tearing up the street, as they have done

cte., without tearing up the street, as they the in the past.

The Asbestos Manufacturing & Supply Company has opened a store on Fremont Street, near Market.

The California Concrete Company has taken a contract for exervation and concrete work for a six-story building at the corner of California and Kearney Streets for \$7,150. The plastering contract for the same building has been taken by Jesse E. Steere for \$6,600.

The Clinton Fireproofing Company is laying the finish cement floors in the new Orpheum Theater, the contract price being \$2,400. The Pacific Construction Company, engineers for the State Board of Harbor Commissioners, have awarded to the same company the contract for concrete floor beams for a wharf at the foot of Second Street for \$21,415. The bid of the Pacific Construction Company for the construc-sion of a concrete bulkhead on section twelve of the

seawall has been accepted.

The Harbor Board has decided to advertise for bids

for a dock to be constructed in Central Basin, near the Union Iron Works, the estimated cost being \$104,000. It will afford docking facilities for three large vessels. It is to rest on green piles, surrounded with a concrete protection.

with a concrete protection.

The contract for the construction of section eleven of the seawall has been awarded to Gray Brothers, whose bid of \$59,675 was the lowest received.

The Board of Works has awarded the contract for the northern part of the East Potrero concrete intercepting sewer to the Hanrahan-Erhardt Company, for \$78,847. Work is now rapidly progressing on the numerous cisterns of the new auxiliary fire protection system, the bonds for which have been issued. These cisterns are being made about fifteen feet deep and twenty-five feet in diameter, and will hold a reserve supply of water, which will be available in case the mains are broken by a possible earthquake. P. H. Mahoney has taken the contract for constructing five of these cisterns for a total of \$20,305.

An action that is likely to result in a somewhat

An action that is likely to result in a somewhat greater demand for building materials of a substantial character in the next few years is a petition to the Board of Supervisors to move the westerly fire limits one block further out, so as to include the west side of Van Ness Avenue.

The Great Western Power Company, which is building one of the largest power plants in the world on the Feather River above Oroville, Cal., has started its first unit of 20,000 horsepower. The tunnel through which the Feather River is diverted has been eemented for its whole length of three and one-half miles, and the other concrete work is practically complete. Almost the entire capacity of this first unit will be required by the new cement mill of the Cowell Portland Cement Company, near Concord, Cal., which will be started up in January.

William J. Dingee, who for a long time has controlled the Santa Cruz Portland Cement Company, with a plant near Santa Cruz, and the Standard Portland Cement Company, of Napa Junction, Cal., has become seriously involved financially, and the plants, after a short period of idleness, have come under the control of the W. H. Crocker interests. The value come seriously involved financially, and the plants, after a short period of idleness, have come under the control of the W. H. Crocker interests. The value of these properties is roughly estimated at about \$9,000,000. It is understood that Dingee's embarrassment was largely brought about by the condition of the eement market during the past year, as prices have continued low, and the output of the two plants has much of the time been greater than market requirements. The Dingee interests were heavily indebted to the Crocker National Bank, the Western Building Materials Company and the Western Fuel Company. The Western Building Materials Company will remain selling agent for the two plants. The directorate of the two companies is now as fellows: George T. Cameron, president; C. E. Green, vice-president; A. F. Morrison, vice-president; W. R. Berry and L. F. Young, secretaries. Since the change in management work at the plants has been resumed. The cement business is now active throughout the entire Northwest. Building is quite active, both in Portland and on Puget Sound, with reinforced concrete finding great favor, and numerous large projects requiring concrete construction are now going on in the interior of Oregon and Washington. Large shipments of cement are being made from San Francisco to Puget Sound, one company having taken an average of 1,500 bags daily since the middle of September.

The foreign cement which has been arriving at Portland, Ore., in large quantities for some time past is now getting fairly well cleaned up, and the importers there report that the inferior grades of cement have been about sold out, and orders are now coming in rapidly for the better grades. Two cargoes have arrived there recently, the ship Neotsfield, from Hamburg, and the bark Brabloch, with a cargo for W. P. Fuller & Company, from Antwerp.

The Cia. Cementos de Hidalgo, of Gomez Palacio, Mexico, is planning to creet another large cement plant, which will furnish cement for the construction of the San Fernandez dam.

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plant, which will rurnish cement for the construction of the San Fernandez dam.

Agitation is going on in Santa Cruz, Cal., for a bond issue to cover the expense of a number of needed improvements, among them being two concrete bridges, the extension of several main severs, and the erection of a new City Hall.

The company operating a large rock crushing plant on the tailings left by the gold dredgers at Oroville, Cal., has found it necessary to add another large crusher to keep up with the demand. The machinery is now on the way. These gold dredges in the Sacramento Valley are turning up the soil in a fruit country, leaving behind them in place of a deep top soil a desert of cobbles and boulders, but it is found that considerable money is to be made by going over the ground again and making these rocks into paving or concrete material.

H. S. Smith, manager of the Concreso Construction Company, of New York, will come to the Coast in a few weeks to consider the advisability of establishing a branch factory in Los Angeles.

A new concrete hospital building of reinforced concrete, to cost about \$73,000, is to be built at the Mare Island Navy Yard.

The opening of the Yosemite Valley Railroad, which was originally planned as a pleasure route to convey people to the Yosemite Valley, promises to become an important factor in the supplying of broken rock. Important quarries of rock suitable for paving and for concrete work are being developed along the line, and as these have an inexhaustible supply of power right at hand in the Merced River, along which the road runs, they can be worked at a minimum of cost. Thomas Prather, of Oakland, Cal., is the first man to take advantage of the situation and has cost. Thomas Prather, of Oakland, Cal., is the first man to take advantage of the situation and has opened a quarry at Jasper, a station on the new road, and has put in a complete power plant for its operation and is turning out crushed rock in large quantities. The largest contract so far received is one from the Santa Fe Railroad Company, which is using this rock for concrete work and for ballasting. The rock is also coming into favor for macadam work in various places. various places.

The Star Sand Company, of Portland, Ore., is having a new towboat built to tow its sand and gravel

ing a new towboat built to tow its sand and gravel barges in the harbor.

The Tejunga Rock Company, which was incorporated in Los Angeles about two months ago with a capitalization of \$200,000, has acquired control of about 4,000 acres in Tejunga Valley, near Los Angeles. On this tract it has large deposits of fine sand and gravel, and a good quality of building stone. It has acquired a rock-breaking plant, which it is installing on its property, and has contracted for a steam shovel, a short railway, and other machinery for the handling of its product. Orders have been received for 100,000 tons of crushed rock and 100 yards per day of sand and gravel. J. B. Jardine, Jr., is president of the Company.

THE TWIN CITIES.

MINNEAPOLIS, MINN., Dec. 20.—The building season of the Northwest is well toward the close of the year, and it is apparent that the season has been improving and advancing steadily for the past five months. Conditions up to the middle of the season were somewhat backward, but after the time mentioned they began to show up better and better and larger buildings have been taken up. The election served to hold things back to a certain extent, but when that passed the sentiment of improvement was noticeable, although it was then too late in the season to take up much in the way of large building. Architects of the Twin Cities have little work on their boards at this time, but they have a great many inquiries. Already there is a better and firmer feeling to be observed in prices on materials, and more of a tendency to ask a fair figure.

Concrete work has tended to cut down the brick demand, but the keenness of demand for concrete seems to be lessened, and that form of construction will hereafter have to fight for its existence with less of the halo of novelty to aid it than has been the case in the past two years. A noticeable fact may be mentioned in Minneapolis that the largest grain elevator of the season, and the largest of its kind of construction ever built, was completed this month, and it is of brick construction. It required a million brick to construct the building, and it is one of the most noticeable sights of the milling district of Minneapolis on the west side of the river.

The building permit totals of the Twin Cities for the year 1908 will show up better than might have been expected. St. Paul will show an actual increase over 1907 of a round half million dollars at least. Minneapolis did not do quite as well in the comparative totals as the other twin, but will come within even and the season within the comparative totals as the other twin, but will come within

over 1907 of a round half million dollars at least. Minneapolis did not do quite as well in the comparative totals as the other twin, but will come within \$200,000 of equaling the 1907 total of \$10,000,000. At this date, Minneapolis is less than \$400,000 behind the total of last year, and has half the month yet to go to overcome that amount.

The Minnesota State Association of Builders' Exchanges met in St. Paul December 9 for the sixth annual convention. Much business of importances

changes met in St. Paul December 9 for the sixth annual convention. Much business of importance came up, but probably no one thing was of greater importance than the formal incorporation of the Minnesota Employers' Association. The organization has been unincorporated heretofore, and has not been as extensive as it will be hereafter. The organization is fathered by people prominent in the building construction lines, and will be made to include large employers of every character of work. The organization expects to do a great deal in the way of fostering constructive legislation, rather than to take the attitude which has been the case too much in the past of appearing constantly to contest hostile legislation. There will be employers' liability legislation of various kinds, as well as the usual run of bills intended to alleviate the condition of somebody, but so drawn as to bring hardship upon employers but so drawn as to bring hardship upon employers without adding to anyone, unless it might be a certain class of lawyers.

St. Paul's building code is to be revised, a commission having been named for the purpose. George J. Grant, the well known general contractor, and T. C. Vandanaker, of the Brayton Engineering Company, are named as representatives of the builders. A. F. Gauger and A. H. Stem are the architects, and S. A. Hill will represent the master plumbers. The S. A. Hill will represent the master plumbers. The code is archaic, having no provision for concrete work, and it is the intention of the commission to work out a code which shall treat all materials fairly and properly.

Minneapolis laid 15.2 miles of sewers during the

as season, the work aggregating about \$350,000. William Pierce Cowles, of the staff of the building inspection department in Minneapolis, will not be a candidate for reappointment, but will retire to go into private work the first of the year. Mr. Cowles is an effective and efficient engineer.

A. R. Van Dyck, architect, of Minneapolis, has returned from an extended tour of Europe, being gone about three months.

S. G. Tuthill was elected president of the Builders' Exchange of Minneapolis and James A. Tyler first vice-president at the annual meeting.

The Bailey-Marsh Company, of Minneapolis, has The Bailey-Marsh Company, of Minneapolis, has been incorporated to do general contracting work. It is composed of Orin P. Bailey, who has been with the J. & W. A. Elliott Company, prominent contractors of Minneapolis, and R. D. Marsh, who has been with W. D. Lovell, a water-works and sewer contractor of Minneapolis. Both active members of the firm are practical civil engineers and they expect to take up construction work through the Northwest. They have arranged for offices at 836 Metropolitan Life Building.

William Rhodes was elected president of the Building.

William Rhodes was elected president of the Builders' Exchange of St. Paul and Andrew Rankin vice-president at the annual meeting, which was held last week.

C. J. Swanson, of the Northwestern Fireproofing Company, of Minneapolis, has devised a new form of tile, which is being produced at his yards. It has a somewhat different shape from other kinds of tile, and has a number of features of value. The new tile will be offered to the trade for the coming

The construction of concrete work in the winter has been greatly facilitated by the use of canvas coverings to protect the work during the stage of setting, and it is quite common to see tall buildings with the upper stories enclosed in a canvas covering, behind which concrete work is actively going on, in spite of the weather.

No hint has been received as to the probable attitude of labor for the coming season, but it is expected that there will be a greater inclination to demand higher wages, as the probabilities are for an active season. Employers, on their part, are strongly inclined to enforce the open shop whenever they feel that they are able to win on the question. Duluth enjoys the open shop, after having had a strenuous contest over the matter during the past year.

MEMPHIS AND THE SOUTHWEST.

MEMPHIS, TENN., Dec. 18.—The building supply people seen here today say that a resume of the year 1908 will show a much larger volume of work than could have been forecasted during the summer months. could have been forecasted during the summer months. December is showing a good average and the outlook for 1909 is propitious. It is true that municipal work during the winter season is held in abatement, but a number of large buildings in Memphis and the neighboring territory are being completed or put in the initial stage of construction, thus making a prolific source of demand. Price changes have been inconsequential.

John A. Denie & Co., South Front Street, reports that December compares well with December a year ago. This firm a few weeks ago made a change in its official organization. Only one man is left out, but several of the old force are transferred to new posi-tions. Under this reorganization C. A. Denie is president; P. J. Johnson, sales agent; J. C. Love-lace, vice-president and general manager; Robert L. Appling, warehouseman, and Frank Chambers, secre-National Builders' Supply Association. They are manufacturers and jobbers of Alabama and Tennes This firm is a member of the see lime, and are exclusive agents for Acme cement plaster and Laclede-Christy clay products.

The Kavanaugh Sand Company, Tennessee Trust Building, reports a good year on the one closing and a bright outlook for 1909. This firm gets ninety-nine per cent of their sand from the Mississippi River and the other small portion is pit sand.

The Cubbins Lime and Cement Company have quite a lot of concrete work on hand. They are using the Royal brand in this work. They are supplying material for a large brick store building corner Poplar

and Fourth, and are also furnishing material for considerable street work in northeast Memphis.

The Union Sand Material Company, Tennessee Trust Building, with yards in New South Memphis, supply a good deal of the sand for the smaller Memphis firms in a territory covering much of that section between St. Louis and New Orleans. They ow They own several boats and go through every process of the work from digging to delivery for the contractors.

The Wright Lime and Cement Company, on South Fourth Street, are supplying the lime and cement for a number of residence and business houses in this section and report a good outlook for the balance of the winter.

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Ilance of the winter.

The Fischer Lime and Cement Company, Adams

The Winding up a fine year. W. W. Fischer,

"The winding up a fine year." The Avenue, are winding up a fine year. W. W. bead of this firm, said to the writer today: head of this firm, said to the writer today: "The year has greatly exceeded expectations and in actual volume will run above last year, this without all the figures in, which will increase the general aggregate." This last firm has furnished lime, cement, etc., for the Y. M. C. A. job in this city, for the Jefferson Theater, and are now furnishing material for Orgill Brothers' warehouse, for the warehouse of the Memphis Paper Company, and for the warehouse of the Barnes & Miller Company. They also have a large contract from the city of Memphis for sewer pipe used by the municipality and are now furnishing cement for a concrete roadway on Johnson Avenue, which, by the way, is the first concrete roadway put down in Memphis. Along the line of municipal work they are furnishing the cement used on the St. Josept Hospital culvert and the material to reinforce concrete bridges known as the Bayou Gayoso Bridge concrete bridges known as the Bayou Gayoso Bridge and the Union Belt Railroad Company Bridge. Seven-thousand barrels of cement are being used on the Madison Avenue job.

The Fischer Lime and Cement Company has obtained the agency for the United States Gypsum Company's line of plasters, and among other progressive steps have added one new warehouse in the East End residence section on Cooper and Central

M. A. Miller, president of the Ferro Concrete M. A. Miller, president of the Ferro Concrete Contracting Company, of New York, has been in Mobile the last few days, and states that his company has taken over the contract, under subletting, from B. H. O'Brine for the construction of lock No. 3 on the Tombigbee River. The new contractors expect to take possession of the premises and commence work on December 21. President Miller estimates that it will take one and one-half years to complete it. As far as possible the supplies will be secured in Mobile.

At Knoxville the Southern Paving and Construction Company and the Barber Asphalt Paving Company were the successful bidders on the abutting property owners' bonds. The total amount of the issue was owners' bonds. The total amount of the issue was \$19,908.78, bearing interest at the rate of six per cent, which issue was sold at par, redeemable on notice in five years. The Southern Paving and Construction Company purchased the bonds where it did the work and the Barber company where it worked.

According to reports, Chattanooga is to land another important agency. J. D. Whittaker, of Atlanta, southern manager of the American Clay Machinery Company, at Bueyrus, Ohio, has made arrangements to locate the southern headquarters there. As soon

as this is done the Atlanta branch of the company will be moved to Chattanooga.

The Park City Sand and Gravel Company has been incorporated at Vicksburg, Miss., with a capitalization of \$20,000. G. Hartweg, W. Callahan, George Clifton

of \$20,000. G. Hartweg, W. Callahan, George Clifton and others are the incorporators.

The Contractors' and Dealers' Exchange, of New Orleans, has just held its annual election of officers, which resulted in the choice of George M. Leahy as president in place of James H. Aitken, who has been president two years, during which time the organization has purchased and remodeled its present splendid building and established the permanent exhibit, which has become an important feature. W. W. Vanmeter was named vice-president and George Avery, treaswas named vice-president and George Avery, treas-

er.
The contractors at Houston, Tex., have been organing. Forty-seven contractors, building supply men
id architects, gathered a few nights ago for the
itial meeting of the Builders' and Dealers' Exange, and a temporary organization was perfected izing. initial meeting change, and a temporary organization was perfected with thirty-four members. The temporary officers are: W. E. Woodruff, president; H. L. Wineburg, secretary, and E. E. Holtkamp, treasurer. It was announced that rooms at 1012½ Congress Avenue, over the Richelieu Cafe, had been secured as permanent quarters for the exchange and will be installed with conveniences for the members. Several of the members have applied for desk room there. The place will be made a general rendezvous for builders and will be made a general rendezvous for builders and contractors of all kinds.

Plans and specifications for a concrete viaduct from Travis Street to Montgomery Avenue, in Houston, Tex., have been submitted to the bridge committee by Engineer H. L. Shaw, of that city, and the structure

will be built soon. The crossing proposed is a structure of solid concrete, thirteen hundred feet in length with a succession of arches, the height from the water level to be fifty-five feet. Mr. Shaw says the structure proposed will cost the city about \$150,000. It will be one of the handsomest and most imposing as well as substantial works of the kind in the Southwest the Southwest.

the Southwest.

Stockholders of the Southwestern States Portland Cement Company met at Dallas, Tex., a few days ago and reëlected a board of directors, and in turn chose the old board of officers. The officers and directors are as follows: W. F. Cowham, Jackson, Mich., president; A. C. Stiob, Independence, Kan., vice-president; Thomas E. Dinsmore, New York, second vice-president; W. H. L. McCourtie, Minneapolis, secretary; N. S. Potter, Jackson, Mich., treasurer; John W. Boardman, Jackson, Mich., auditor.

LOUISVILLE, KY.

LOUISVILLE, KY., Dec. 20 .- The building situation is showing a better condition than in many months. Last month its increase was 292 per cent over the amount of construction accomplished in November, amount of construction accomplished in November, 1907, and the indications are that the fine weather which prevailed this month will have the effect of keeping the mark well up. Builders and those connected with the various allied trades are much encouraged at the fine showing made so late in the season, and believe that 1909 will be marked by a still heavier increase.

The weather has played an important part in ork done in Louisville of late. Though no large work done in Louisville of late. Though no large work has been announced, contracts for much that has been under way have about been completed, the favorable conditions being taken advantage of to rush things to a finish. Thus the contractors have nearly all been kept busy. Nearly everybody has been pleased, too; for while it has not been cold enough to interfere seriously with the handling of concrete, enough rain has fallen to make the roofers look a little more contented than they have been deing look a little more contented than they have been doing

It has been announced that those in charge of the construction of Louisville's \$4,000,000 sewerage system expect to be able to continue construction work all through the winter. This is good news to many, as it means that contracts for cement and other materials will be filled right along through the off season. The sand companies, too, which have already entered upon their dull period, expect the heavy construction in connection with the sewers to aid them considerably.

An odd piece of work was done recently by the An odd piece of work was done recently by the Central Concrete Construction Company, as related by T. M. Wintersmith. It is in connection with the erection of a shelter house in Cherokee Park as a Gaulbert memorial. The company built six concrete columns for the building and the unusual feature about it was that they were molded in one piece, instead of in sections. The shafts were therefore made eight feet high.

Mr. Wintersmith said that for this time of the year a good deal of work is being done. Some rather interesting features were developed in connection with the building of concrete bases for tanks constructed at the plant of the Mengel Box Company. Many concrete foundations for residences have been built, one large one being that of Jake Gribble at Eartieth and Greenwood Avenue. Fortieth and Greenwood Avenue. at

Pauk & Kirschner, a construction firm of Dayton, Ohio, was awarded a contract for the building of the Twenty-ninth Street sewer by the Sewerage Commission. Three firms bid on the work. Several other contracts for sewer work will be let later this

Rain helped the business of the Southern Roofing Paving Company, which has been busy with jobs varying sizes of late. Some of them were big of varying sizes of late. Some of them were big enough to require more than the average amount of attention and material. C. A. Monks, of this company, who is president of the National Association of Composition Roofers of America, is much interested in the development of the uniform specifications, which are being gradually adopted all over the country. He thinks that the action of the Barrett Manufacturing Company some time ago in adopting the uniform rules will eventually lead the rest of the trade to do the same thing.

A drainage canal has been proposed by the South Louisville Progressive Club to reclaim twelve to fif-

Louisville Progressive Club to reclaim twelve to fif-teen square miles of land south of the city. The esti-mated cost of the work is \$90,000. If the canal were built much of the work would be of concrete con-

struction. Things are rather dull with the National Concrete Construction Company, now that their big job of the year, the Bourbon Stock Yards, has been given the final touches. J. H. Ohligschlager has gone to Evansville to superintend the construction of the Exchange Building and the packing company's plant there. The LaSalle Building, in St. Louis, is also occupying his attention. Not much work is definitely in prospect, but it is believed there will be a good deal of it next season.

W. G. Land has sued the Ferro Concrete Construc-tion Company for \$11,444 for alleged breach of con-tract in connection with work on the southern outfall sewer.

One of the most interesting examples forced concrete work ever seen in Louisville is the chapel of the Fourth Avenue Presbyterian Church, at Fourth and Kentucky Streets. It is built of conrete all the way through, and is said to be unique in many respects. Gray & Hawes, of Louisville, are the architects, and Mr. Gray, in describing it to a ROCK PRODUCTS representative, said:

"This building representative, said:
"This building represents the first attempt to construct a church along the traditional Gothic lines, yet according to the most advanced engineering and architectural ideas. The old Gothic ideas have been carried out in concrete as they were formerly carried out in masonry. Everything is exposed, the vaulted roof, the concrete window arches and all the supports. The arches are given a cement finish and the outside walls are decorated with terra cotta. The floors are of concrete, marked off into patterns. The noors are of concrete, marked off into patterns. The roof trusses are of reinforced concrete. Few churches in this country are of concrete construction, and I believe that this is the only one in which the old designs have been worked out according to the new methods."

The building, which is rapidly nearing completion, will cost about \$40,000. Coupe & Gray, a newly organized engineering firm, are the contractors in

The Southern Wall Plaster Company has incorporated with a capital stock of \$15,000. The incorporators, with their holdings, are: Arthur J. Bannon, 60 shares; Joseph Kollross, 45 shares; Fred

non, 60 shares; Joseph Kollross, 45 shares; Fred Jeffers, 45 shares.
General Manager Gray, of J. B. Speed & Co., said that owing to the approach of winter, trade has fallen off considerably. The plant of the company, at Speeds, Ind., has been closed down for the winter for the purpose of enabling the annual repairs to be made. It will remain closed until the middle of February or the first of March. A sufficient stock is on hand to take care of existing contracts, but owing to the continuation of sewer construction work, which will require a very large amount of cement. which will require a very large amount of cement, the company is not going after much new business.

Coupe & Gray, local engineers and contractors, were substituted for Hines Brothers, of Canal Dover, ohio, the latter having been awarded a contract for work on Section A of the southern outfall sewer and later finding that the bid they had entered was too low. The substitution was by mutual agreement of the contractors and the Sewerage Commission.

C. Horner, of the Kosmos Portland Cement Company, said that work on the new plant of the com-pany is progressing well, and that it will be operating by March I. The erection of buildings is to begin at once and most of the machinery is ready to be installed. The buildings, which are of steel and concrete construction, are being erected by the com-

pany.

Nothing very definite is in prospect, according to the National Roofing & Supply Company. Most of the work being done at present consists of small jobs, and the situation may be described as quiet. Prospects are somewhat brighter, however.

The Louisville Courier-Journal recently published in its magazine supplement photographs of the principal buildings erected here during the past year. As it happened, two of them were constructed of reinforced concrete. They were the Belknap warehouse and the building of the Fireproof Storage Company. They are fine examples of the reinforced concrete type of structure.

They are the company of the Kentucky Wall Plaster Com-John Campbell, of the Kentucky Wall Plaster Com-John Campbell, of the Kentucky Wall Plaster Company, is nothing if not optimistic. "Business is good," he said tersely; "the building outlook is good, and in fact all our prospects are good."

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John M. Settle, of the Ohio River Sand Com-uny, said that the season's work has been about John M. Settle, or the Onlo Miver Said Company, said that the season's work has been about wound up, though they are still digging sand at their up-river island. This will be over by January 1, however. Little sand is sold during the winter. "This has been an off year with us," said Mr. Settle, "on account of little building going on. Prospects are rather uncertain, but we are all hoping for improved conditions in 1909."

conditions in 1909."

Bernard Haming, secretary and treasurer of the National Concrete Construction Company, of this city, died November 24 in a St. Louis infirmary. His death was due to blood poisoning, caused by an injury received several weeks before. The poisoning did not become evident until a few days before his death. He was only twenty-three years old and had been in the concrete construction business for six

years. He was well known here and was a graduate of St. Xavier's College. His parents survive. Burrell & Walker reported that business is rather

bad, but that prospects are good. The small amount of building has as one of its immediate results little sewer connection work, said Mr. Burrell. However,

sewer connection work, said Mr. Burrell. However, after the first of the year better times are hoped for. The Southern Brick & Tile Company will furnish the brick for the new drill hall of the De-Molay Commandery, a local Masonic organization which recently purchased a residence near Second Street and Broadway and is converting it into a model asylum. The drill hall will be 90x70 feet and will cost \$25,000. Rommel Brothers are the general contractors. Brick work in general has been lively lately, owing to the closing up of contracts by those who have been taking advantage of the favorable weather. A good many orders are ahead, too.

The city business of the Louisville Fire Brick Works has been good, though the shipping trade has fallen off somewhat. The resumption in the iron and steel industries, which was reported to be going on rapidly, has apparently not set in quite so fast as had been expected, particularly in the Alabama district. However, the improvement is in process, and

trict. However, the improvement is in process, and the general outlook is considerably improved.

INDIANAPOLIS.

INDIANAPOLIS, IND., Dec. 20.—The coming year looks exceptionally promising for the cement industry in all of its phases. Cement mills are running to their full capacity and many of them are making substantial additions to their plants. Prices, while lower than they were a year ago, will doubtless regain a normal basis within the next few months. Reliding operations this ways have been practically. Building operations this year have been practically the same as they were last year, despite the recent panic, and more than \$1,000,000 worth of building is

n sight for the beginning of the new year.

Rubush & Hunter have plans for a City Hall building to cost \$600,000. Foundations will be of reinforced concrete and the Board of Public Works will

ask bids at an early date.

Plans drawn by Brubaker & Stern for a contagious disease hospital have been approved by the Board of Public Works and bids will be received until December 28. There will be four buildings, a two-story building for the accommodation of the nurses and other employees, two contagious disease pavilions and a service building. The construction will be of rein-forced concrete, faced with brick and trimmed with Bedford stone. The work will cost approximately

The Lehigh Portland Cement Company is working its two plants at Mitchell full time and has orders enough ahead to insure steady running for several months. The company is planning to build a third mill, which, it is said, will be larger than either of

the other two.
C. W. Minnick, of Newcastle, has completed a big C. W. Minnick, of Newcastle, has completed a big reservoir at the municipal water works plant in that city. It is sixty-four feet wide, 164 feet long and twelve feet deep, with concrete walls, reinforced with steel. The bottom is also of concrete. The walls are eighteen inches thick and the reservoir is arranged so that one half can be emptied while the other half is being cleaned. With ten feet of water, the reservoir will hold 750,000 gallons and 725 barrels of Lehigh Portland cement were used.

The Vincennes Bridge Company, of Vincennes, Ind., is building a lock and dam at the southwest extremity of Hoveys Lake, near Mt. Vernon, which will allow about 3,000 acres of good corn land to be reclaimed. The concrete walls on each side of the bayou will be fifty feet long, two feet thick and twenty-three feet high, reinforced with steel bars.

A company has been organized for the manufacture of concrete blocks, columns and other concrete building material by W. B. Wells, William Dunson and Charles Stewart. It is known as the Indianapolis Concrete Company and has \$10,000 capital.

The National Concrete Company, of this city, has a large contract for putting concrete abutments and a viaduct under the tracks of the Lake Shore Railroad at Angola for the St. Joseph Valley Railway Company.

Company.

contract for 101,000 feet of concrete gutters in Brookville has been awarded to the Sullivan Cement and Stone Company, of Sullivan.

Stout has opened a factory at Dublin for the facture of concrete tile, a comparatively new manufacture

industry in Indiana.

An ordinance regulating the manufacture of con-An ordinance regulating the manufacture of concrete blocks and governing massive concrete construction has been introduced in the City Council and will likely be acted on favorably at an early date. The ordinance was prepared by Building Inspector Thos. A. Winterrowd and has been endorsed by practically all of the local block manufacturers.

An ordinance was introduced last spring which

was similar to the present one, except that it in-cluded reinforced concrete construction. Objection was made to having reinforced concrete included in the ordinance, and the council refused to pass it as

The first ordinance was withdrawn and the present one substituted. The ordinance is as follows:

Sec. 1—Be it ordained by the common council of the city of Indianapolis, Ind.: That all massive concrete and concrete blocks hereafter used in the construction of buildings within the corporate limits of such city shall be constructed in compliance with the following ordinance:

Sec. 2—Concrete work as applied to building construc-on within the meaning of the ordinance is divided into wo classes, as follows:

Concrete block, which will include the ordinary moulded concrete blocks and lintels, sills, ornamental work and facing, constructed of separately moulded or cast blocks of concrete.

Massive concrete, or concrete containing no steel reinforcements.

Massive conferete, or concrete containing no steel reinforcements.

Sec. 3—Concrete blocks shall be made of a concrete
mixture composed of Portland cement as required by the
"American Society for Testing Materials," clean, sharp
sand and clean gravel or crushed stone, free from loam
or earthy matter, thoroughly mixed in the proportions
of one of cement, two of sand and four of gravel or
stone. No particles are to be larger than 3-4 and are to
grade gradually to small particles commonly called grit.
These proportions may be varied as the case requires if
approved by the inspector of buildings. All foundations
and walls constructed of concrete blocks must be of sams
thickness as required for brick work of the general ordinance, except that ten-inch blocks may be used for first
story of a two-story dwelling. The bed of the block will
be considered as the thickness.

Sec. 4—The maximum height for a story shall be found.

be considered as the thickness.

Sec. 4—The maximum height for a story shall be four-teen feet; any additional height shall be treated as an additional story.

Buildings built of concrete blocks shall be limited to three stories for residences and two stories for business or to three stories in which the upper stories are to be used for living purposes.

Sec. 5—Blocks shall not be used for building purposes until they are at least twenty days old, and older if conditions require, as may be directed by the inspector of buildings.

buildings.

Blocks may have one or more hollow spaces, provided not more than one-third of each block is hollow.

Sec. 6—No wall shall be of greater length than fifty feet unless supported by a cross wall or provided with pilasters.

Blocks must be laid in Portland cement mortar mixed one part of cement to three parts of clean, sharp sand, with not more than 25 per cent of hydrate of lime. The mortar shall be mixed in small batches and used imme-diately.

diately.

All beds and vertical joints must be flushed full.

Brick walls and piers must be started on substantial footings built of solid masonry.

Sec. 7—Where walls or piers are built of more than one block in thickness, every fourth course must be a header course, or every fourth block in each course must be a header sole of the beds of

is an offset in the thickness of walls, the offsetting course or ledge course must be built of solid blocks.

Sec. 8.—Piers and buttresses, supporting lintels with a load in excess of five tons, must be built of solid blocks for such distance below the bearing as may be required by the inspector of buildings.

Piers and pliasters supporting heavy loads must be built of solid blocks and must be as large in area as required by the load, which, in no case, is to exceed ten tons per square foot of area. All piers are to have solid caps of masonry or metal.

Concrete lintels and sills shall be reinforced concrete, and any lintel spanning over five feet in the clear shall rest upon solid concrete blocks.

Sec. 9.—For the purpose of identification, a brand must be permanently attached to every block, with the date of manufacture. Each manufacturer of cement blocks must file in the office of the inspector of buildings the name of manufacturer, the brand of the blocks and the location at which the blocks are manufactured.

Sec. 10.—All cement blocks thirty days old must be capable of standing a compression test of one thousand pounds per square inch of superficial area and a tensile test of one hundred and fifty pounds per square inch. No allowance shall be made for the hollow space.

All manufacturers of concrete blocks shall file with the inspector of buildings at least once a year a bona dide copy of a test of four blocks selected by the inspector. The inspector of buildings may order tests into be made by reputable parties approved by the inspector.

The inspector of buildings shall have author-

The Inspector of the uniformity of the strength any time to determine the uniformity of the strength the blocks.

Sec. 11.—The inspector of buildings shall have authority to condemn any block or blocks that have not been made in accordance with these regulations or have not the required strength as determined by the test called for herein.

Sec. 12.—When concrete blocks are used for party walls, they must be made solid blocks.

Massive Concrete.

Sec. 13—Massive concrete may be used in general in the construction of footings, basement walls, heavy columns or plers, retaining and enclosing walls, supports or other construction requiring a heavy mass and shall be designed in accordance with the following provisions:

Sec. 14—Massive concrete when used for bearing walls or bearing partitions, columns, plers, foundations, machinery supports or other similar construction carrying only vertical loads, shall be designed for a working load not greater than the values given below for various proportions of mixture.

One part cement, two parts sand and four parts stone and gravel—22 tons per square foot.

One part cement, two and one-half parts and and five parts stone and gravel—12 tons per square foot.

One part cement, three parts sand and eight parts stone and gravel—16 tons per square foot.

One part cement, four parts sand and eight parts stone and gravel—16 tons per square foot.

Provided, no wall shall be less than two inches thicker than any superimposed wall.

Provided, the thickness of such wall is not less than one-sixth of the clear height between lateral bracing.

Sec. 15—Massive concrete used for retaining walls or other construction throwing upon such work stresses other than vertical loads, shall be of special design and the method of calculation for same shall be clearly indicated upon the plans.

Sec. 16—Proportions of mixture as mentioned in Sec. 14 shall be understood to measure mixture of mortar

method of calculation for same shall be creatly upon the plans.

Sec. 16—Proportions of mixture as mentioned in Sec. 14 shall be understood to measure mixture of mortar consisting of the cement and sand in the various proportions specified, combined with the respective parts of the aggregate meaning the stone or gravel.

Cement shall mean a Portland cement as required by the "American Society for Testing Materials."

Sand shall mean a clear, sharp, free from loam, earth or vegetable matter, which will pass a four mesh to the inch wire screen. A sand of varying size particles from largest to smallest will be preferred.

Stone shall mean a clean, hard broken stone, screened to remove the dust; in general all particles shall pass a two-lach ring.

Stone shall means remove the dust; in general an processor two-inch ring.

Gravel shall mean a clean, washed gravel, free from getable matter or refuse and same size as specified for the speci

Sec. 17—Concrete may be used of a natural mix of gravel and sand where the proportions of the sand in the gravel is 50 per cent of the amount of the gravel, or, in other words, one-third of the total, but such proportions of sand to gravel must be determined accurately and as often as may be required before the use of such a natural mixture shall be allowed.

Proportions of mixture must be clearly marked on each part of plans where massive concrete is shown.

CLEVELAND.

CLEVELAND, OHIO, Dec. 19.—Building operations have been held up very little as yet by inclement weather. With the exception of three or four days during the past month, when it has been too cold and stormy to work, things have been booming right along on the big jobs, many of which were started late on account of the tight money market. Every how it is being made to count however and some fast hour is being made to count, however, and some fast building records are being made by the Cleveland

building records are being made by the Cleveland contractors.

A review of the building records of the past year, in this city, indicates that almost \$10,000,000 has been spent here within that period in new projects, not including many big jobs started last year and completed this. The record will not equal that of 1907 or 1906, both of which were abnormal years, but it will exceed that of 1905 and all former years in the history of the city. The total for the year—with the last two weeks estimated from the first two of December—will be \$9,841,012, as against \$15,888,400 for the last year, \$12,927,974 for 1906 and \$9,777,145 for 1905. The record fails to show the \$1,000,000 spent this year on the Courthouse and several millions on other equally big contracts, for which permits were issued in 1907. April showed the best record for any month of the year, 823 projects being started, at a cost of \$1,442,667.

The outlook for the new year has probably never been brighter. With scores of projects held up by the close money market, there is now a tendency to get these under way. They include three propositions requiring nearly a million apiece, with others of small size, but of considerable importance. The Brotherhood of Locomotive Engineers has announced that, in March, it will begin work on its new \$1,000,000 skyscraper on Ontario and 8t. Clair Streets. It will be of glazed terra cotta, like the Chicago Rail-way Exchange. It will be twelve stories high and

will be of glazed terra cotta, like the Chicago Railway Exchange. It will be twelve stories high and will have an auditorium seating 1,500 persons. Knox & Elliott, of Cleveland, have been chosen as architects for the structure. It is expected that it will be teets for the structure. It is expected that it will be ready for occupancy in about a year's time from

starting.
Steel for eight of the twelve stories of the new A. A. Pope Building on Euclid Avenue has been erected and work has begun on the terra cotta, with which the two street sides are to be faced. Halle erected and work has begun on the terra cotta, with which the two street sides are to be faced. Halle Brothers, one of the big retail concerns here, has leased the structure for a long term of years and a building boom of considerable magnitude has been started on upper Euclid Avenue. The Tidewater Construction Company, of New York, has the general contract for the work. Henry Bacon, of New York, is the architect.

is the architect.

On January 1, the Reaugh Conscruction Company starts work on its contract with the Bailey Company for the erection of a ten-story building on Ontario Street. It will have a frontage of about ninety feet and a depth of 150 feet. Steel and concrete will be the materials used. The facings will be of pressed brick. The building, which will cost \$250.000, will be ready for occupancy, it is hoped, by midsummer, as a large gang of men is to be put to work on it. is the architect. work on it.

Cleveland Elks are to build a new home for themselves. The order owns a large lot on East Sixth Street, opposite the Central Armory, which faces on the new group plan. It is intended to spend about \$200,000 on the structure. It will probably be of concrete, terra cotta and stone. It is hoped that the plans will be ready by spring.

Contracts are to be let early in January for a South Side branch library, costing \$40,000. It will be located at Scranton Road and Clark Avenue, and will be one of the prettiest in the city. Money for the building itself is being donated by Andrew Car-Cleveland Elks are to build a new home for them

negie. Work on the West Side branch, for which Mr. Carnegie gave \$125,000, is being pushed rapidly and the building will be ready for occupancy in the spring. It is largely of terra cotta and concrete.

For the first time in its history, Cleveland now has an eight-story concrete building. No sooner had the building ende been altered three weeks are

For the first time in its history, Cleveland now has an eight-story concrete building. No sooner had the building code been altered, three weeks ago, than work began on the seventh story of the new M. A. Bradley block at East Second Street and Prospect Avenue. In two weeks' time, the eighth story had been finished—eight stories in eight weeks, which isn't bad for concrete, by the way. The building will be finished for occupancy by March 1. It will cost \$150,000, but would have gone double that amount had steel been used instead of concrete. It promises to be one of the finest in town. It will It promises to be one of the finest in town. It will be finished in mahogany and marble. M. A. Wells, the architect in charge of the work devised a new way to join the iron rods, a thing demanded under the revised building code.

The Board of Education has announced plans for the expenditure of about \$700,000 in buildings during the next year. These will include a \$350,000 John Hay high school, \$100,000 for a normal school on an adjoining site, \$100,000 each for two elementary schools, together with two or three ten-room annexes to schools already built. Plans are being rushed to completion and bonds will be sold for \$450,000 of the money during January. An increasing use of eement is being noted in all the school buildings. Since the Collinwood fire, in which 173 children lost their lives in a Cleveland suburb, the Board of Education has expended upward of \$100,000 in fireproofing old buildings erected prior to 1890. Since that time fireproof buildings have been the rule.

The transfer of the Republic Building lease on Euclid Avenue to the Tenbusch Realty Company has brought forth the announcement that the present The Board of Education has announced plans for

has brought forth the announcement that the present structure is to be razed in a few months and a six-

has brought forth the almountement that the present structure is to be razed in a few months and a sixteen stock skyscraper erected at a cost of \$700,000. The site is one of the most valuable along Euclid Avenue and the company holding the lease is said to have excellent financial backing.

A great stadium for Brookside Park is being agitated. There is a great natural amphitheater caused by a concave in surrounding hills, with a three-acre level space at the bottom. This has been graded and terraced. It is proposed to build tier upon tier of concrete platforms, on which seats can be placed. It is hoped that the first section, capable of seating 20,000 people, will be started in the spring. Across the top it is proposed to spread a great tent cover, supported at each side to keep it in place.

The county commissioners have awarded a contract to L. W. Mackenzie for the erection of a concrete retaining wall on Albion Road, and for a re-

tract to L. W. Mackenzie for the erection of a concrete retaining wall on Albion Road, and for a reinforced concrete bridge on Drake Road. The same contractor has also been given a contract by the City Board of Public Service for a concrete bridge on

East Ninetieth Street.

East Ninetieth Street.

F. M. Kirby, who owns a string of 5 and 10-cent stores throughout the country, will erect a six or seven-story building on Euclid Avenue, near East Fourth Street, where two buildings were recently burned. The structure will have a frontage of sixty feet and a depth of 150 feet. A long term lease has been taken on the property. Work on the building will be started at once, as soon as the debris is removed from the site.

A five-story warehouse building for J. A. Roebling

A five-story warehouse building for J. A. Roebling Sons was started last week on St. Clair Avenue. It will cost \$30,000. A new \$35,000 contract for a combination church and school for the St. John Cantius congregation has been let to Philip Kirschner & Com-It will be rushed along as fast as the weather

pany. It will be rushed along as fast as the weather will permit.

During the past year, the city a share of the cement walks laid within its limits cost \$12,000, about the largest in its history. The city officials say that during the year they have been trying to cover the outside districts and that during the coming twelve months more attention will be paid to renewing down town sections. President Springborn, of the Board of Public Service, has announced that he will ask \$125,000 as the city's share of the paving to be done next year. There is a surplus from another fund of \$25,000, which is also to be used. A number of contracts will be let in January or February, so that an early start can be made. Streets with sandy soil will be paved first. will be paved first.
Crowell & Sherman, a Cleveland concern, has pulled

Crowell & Sherman, a Cleveland concern, has pulled a big plum from the contract pie during the past month. It includes a long section of the reconstruction of the Eric Canal, their bid of \$1,263,000 having been accepted. Over 5,500,000 yards of dirt will be moved and 35,000 yards of concrete set. Active work on the contract begins in the spring. The company is at present engaged on a big concrete construction job in connection with the making of locks and a dam on section eight of the barge canal near Schenectady, N. Y.

The National Concrete Specialty Company, of Sandusky, Ohio, has been incorporated for \$10,000.

The incorporators are Emil L. Braming, Paul H. Spow, Chester C. Westerbold, Jay K. Holland and Rollins Kerste.

As the date of the big cement show in the Central Armory grows nearer, the interest becomes more intense. It is hoped that upward of 2,500 visitors will be attracted to the city on account of the big exhibit, in addition to those living in the city and vicinity who are interested in concrete.

BUFFALO.

Buffalo, N. Y., Dec. 14.—Representative Alexander, of Buffalo, says that at this session of Congress \$1,600,000 will be appropriated to complete the improvements on the Black Rock harbor in this city. provements on the Black Rock harbor in this city. An estimate of \$43,200 for rebuilding a section of the concrete breakwall in Buffalo will be recommended. The Niagara River will be dredged out here for a distance of 1,000 feet. Mr. Alexander says it will be necessary to cut through four feet of stone in the bed of the river. The Black Rock shiplock, in the bed of the river. The Black Rock shiplock, which was begun this year, is about 40 per cent completed. The cofferdam has been put in and the excavation is half finished. The lock will be 650 feet long and seventy feet wide. Much cement is being used in connection with this contract.

Deing used in connection with this contract.

Concrete houses are very popular in Kenmore, a suburb of Buffalo. The latest concrete and frame house being built there is that of William C. Lehr. The structure will cost \$2,800.

The structure will cost \$2,800.

James F. Davison, superintendent of the street department of North Tonawanda, N. Y., has officially reported that nearly three miles of cement sidewalk were constructed in that city during the summer season of 1908. In addition to the regular cement sidewalks North Tonawanda constructed nearly 1,000 feet of sidewalk approaches and cement crosswalks.

Frank L. Getman, deputy state engineer, of New York state, has accepted the improved Ward State road from the city line of North Tonawanda, N. Y., to Sanborn, N. Y., a distance of four and a half niles. He says the concrete culverts along the road are artistic and well built.

By operating a concrete mixer by means of power

are artistic and well built.

By operating a concrete mixer by means of power furnished by an automobile Charles Swanson, a Jamestown, N. Y., contractor, recently attracted much attention. Jacking the wheels of the auto off the ground the Jamestown man connected the motor car

with the mixer, and, starting the power, successfully operated the heavy machine.

A report from Port Colborne, Ont., says that Contractor M. J. Hogan is operating in that town a successful concrete mixer received from the Mussens

cessful concrete mixer received from the Mussens Company, of Montreal.

State Engineer Skene announced that \$921,400 worth of work was completed in connection with the building of the new barge canal in New York State in November. It was reported that in connection with the work so far 351,000 yards of concrete and 57,306 yards of stone work have been used. It is estimated that about 58,947 cubic yards of concrete were laid during November.

that about 58,947 cubic yards of concrete were laid during November.

It is reported here that the tanks of a new storage warehouse to be built by the Grand Trunk Pacific at Fort William, Ont., will be of concrete and will have a capacity of three and a quarter million bushels of grain. The entire plant will cost about \$1,250,000. The Stewart Company will have the main contract.

The Toronto (Ont.) Plaster & Supply Company's factory in the rear of Florence Street in that city was recently gutted by fire. Considerable damage was

was recently gutted by fire. Considerable damage was done to a large amount of cement.

A concrete wharf, 518 feet in length, is being built at Lakefield, Can., under the direction of Superintendent McClellan.

tendent McClellan.

Dwight D. Waldo, a well known engineer, who figured prominently in connection with the construction of the concrete breakwall at this port, died recently. At one time he represented the United States Government as a consulting engineer in Panama.

M. A. Hanna & Co., of Cleveland, will build a \$3,000,000 steel plant near Niagara River not far from Buffalo. Dark & Co., Buffalo, contractors, have been working on the foundations for the plant.

The New York Central Railroad will build a viaduct near Horseshoe Lake in the town of Stafford.

duct near Horseshoe Lake in the town of Stafford,

About 400 feet of the new section being added to the Government's concrete breakwall in Buffalo has been completed during the past season by the Canal Company. The entire contract amounts to

The Buffalo Chamber of Commerce has notified Secretary of War Wright that the harbor entrance here should be widened 1,000 feet instead of 500 feet,

as now proposed. Other improvements are suggested.

Fred W. Bond, of Buffalo, has sent an objection to the Public Service Commission of New York State against the Lackawanna Railroad. He alleges that the road compelled him to pay excessive charges for the movement of lake sand.

The Michigan Alkali Company has closed a contract at Detroit with the American Shipbuilding Comfor the construction of a new freighter, which be operated in the limestone trade between na and the plant of the Michigan company at andotte.

The Department of Public Works at Ottawa, Can. has received bids for the construction of a dam at the

has received bids for the construction of a dam at the foot of Lake Temiskaming.

A plan to improve the harbor of Troy, N. Y., is being agitated by the Chamber of Commerce and the city authorities there.

The Eric Railroad Company has applied to the Public Service Commission at Albany, N. Y., for permission to issue bonds to the amount of \$30,000,000 for the nurpose of making improvements and refund for the purpose of making improvements and refunding obligations.
It is reporte

is reported that the \$25,000,000 worth of improvements now under way on different parts of the Lackawanna Railroad will be followed by the exten-

Lackawanna Railroad will be followed by the extension of the Lackawanna lines to Chicago.

A permit has been granted to the New York Central to construct a line connecting the Niagara Falls branch of that road with the Lackawanna Steel Company's quarries at the village of Pekin, N. Y. The steel company will ship a great quantity of limestone from the quarries to its plant at West Seneca, a suburb of Buffalo.

Plans for the transformation of the porthers are

rom the quarries to its plant at West Seneca, a suburb of Buffalo.

Plans for the transformation of the northern section of Warren County, New York, into a state reservoir are being prepared by the New York state engineer. A report from Schenectady, N. Y., says: "The dam, if erected, will wipe off the map the village of Chestertown and partly flood the villages of Horicon and South Horicon. This is necessary to create a big storage lake which will be drawn on in dry times to feed the new 1,000-ton barge canal being constructed in New York state."

A. W. Thorn, president of the Thorn Cement Company, when asked regarding the business of his company during the past year, answered: "Very satisfactory indeed." He says the general outlook of the business is very healthy and that the prospect for the year 1909 is excellent. His company's Canadian plant at Belleville, Ont., is doing a very satisfactory business.

business.

Lewis J. Bennett, president of the Buffalo Cement Company, speaks in a very hopeful manner of the coming year's business. "We are gradually pulling out of the hard times," said Mr. Bennett, "and while our recovery seems slow it is sure. The workingman must have an opportunity to get to earning again before we can hope for our former prosperity." Mr. Bennett recently made an address on the Panama Canal before a large audience at the Universalist Church here. He recently spent ten days making a trip through the canal and saw the place where the great explosion occurred lately.

great explosion occurred lately.

"We have a few large contracts for the coming year," said Mr. Bennett, "which we do not care to make public yet, but you may say for me that business in our line shows a healthy tone and we look for a big year." for a big year.'

PHILADELPHIA.

PHILADELPHIA, PA., Dec. 16.—The last month has shown a decided improvement in the general building supply business, and builders have taken advantage of the propitious weather to push their operation work. A lull, however, must be looked for now as the season advances. It has already begun in cement centers, but the suspension in no wise affects the general impression that the coming spring will open up a prespersus year in all lines of construction. open up a prosperous year in all lines of construction. Plans are being prepared for hundreds of dwelling houses, as well as many large structures. Consider able work in extension bridge building, etc., will be given out by the railroads, consequently the outlook given out by the railroads, consequently the outlook is unqualifiedly encouraging. Among some of the important work in contemplation is a large store building, to be erected at 1926 to 1930 Arch Street, for the Gregg Carriage Company, costing about \$100,000. The building now occupied by this company was sold to the People's Trust Company, which purposes to erect a building on the site, costing about \$250,000.

A contract was recently given out for an addition to the factory building of Fels & Company, on Island Road, south of Woodland Avenue. The building will be four stories in height, of concrete, 84 by 200 feet, and will cost \$110,000. Wilson, Harris & Richards are the architects.

The H. B. Deal Company has secured a permit

ouild a one-story concrete and terra cotta bank building for the Textile National Bank at Kensing-ton and Huntingdon Avenues, costing \$35,000. The erection in the near future of the Curtis Publishing Company's extensive concrete building at Sixth and Walnut Streets, has caused an advance in realty values surrounding Washington Square, im-

mediately opposite the proposed Curtis building. A recent sale in this locality of a valuable lot 53.5 by 82.5 feet to Charles S. Jenkins, secretary and treasurer of the Wilmer Atkinson Company, publishers of the Farm Journal, has given rise to the rumor that this company will soon erect a new building there. The H. E. Havens Company has secured the contract for a seven-story concrete store building, 18.6 by 104 feet, to be erected at 1306 Chestnut Street, for the North Piano Company. The contract price is \$50,000. Work will start on the building February 1, 1909.

\$50,000. Work will start on the building February 1, 1909.

The Master Builders' Exchange held its monthly entertainment at the Exchange Building on November 28, and the attendance of members, which was large, is proof positive of the popularity of these monthly social gatherings. After a light luncheon, accompanied by orchestra music, President Cyrus Borgner called the meeting to order, after which he introduced Frank Miles Day, one of Philadelphia's prominent architects, and past president of the American Institute of Architects, who made the address of the day. The theme upon which Mr. Day discoursed was the "Relation Between the Owner, the Architect, the Master Builder, the Contractor and the Subcontractor." He prefaced his address with an interesting story of the crude way in which architectural work was done in ancient times, referring to and explaining what was practically the first strike among the working men of that period. He expatiated at large upon the defective conditions existing between the architects, contractors, subcontractors, etc., and made some interesting suggestions as a possible remedy to bring about a better understanding between the parties concerned, advising making a point of able, conscientious work, rather understanding between the parties concerned, advising making a point of able, conscientious work, rather than of mere profit in their operations. He said that a builder ought to have a technical training, as well as the architect and engineer, and would exact that he be not permitted to enter into business until that he be not permitted to enter into business until he shall have reached the age of thirty years and is in a position to take up the work intelligently. The matter was well handled and has given the master builder much food for future thought. A unanimous vote of thanks was tendered Mr. Day for his in-

The Engineers' Club held a business meeting at its room, 137 Spruce Street, on November 23, the president in the chair. One hundred and thirty-three members and visitors were present. After the min-utes of the last meeting were read and approved, the nominating committee reported the following names nominating committee reported the following names for officers of the club: For president (to serve one year), W. P. Dallett; for vice-president (to serve three years), Philip L. Spalding; for secretary (to serve one year), W. Purvis Taylor; for treasurer (to serve one year), H. E. Ehlers; for directors (to serve three years), George T. Gwillian, Charles F. Mebus, Edward S. Hutchinson and A. C. Wood. Election tellers reported that George Washington Hyde, William Eckley Dodds, James Robert Buchanan and William Henry Johnson, Jr., were elected to active membership; Louis Christian Smith, Stehman Atlee Bockius, Stanley Hubert Wright and John Andrew Baumgardner to junior membership, and Joseph Van Eman Titus, George Andrew Bauer and Richard W. Yerkes to associate membership. After association matters were transacted, C. D. Ehret, active member, presented the paper of the evening, association matters were transacted, C. D. Ehret, active member, presented the paper of the evening, "Wireless Telegraphy and Telephony." At the meeting of the junior members on November 16, the nominating committee reported the following nominations for officers to serve during the year 1909: President, E. E. Krauss; vice-president, Karl Nibecker; secretary and treasurer, Paul R. Loos. A paper was presented by James F. Haldeman on "The Test of Reinforced Concrete Buildings, Mushroom System."

H. W. Fetter, second vice-president of the William G. Hartrauft Cement Company, Real Estate Trust Building, states that business has been very fair right along, but a natural slackening up has set in now. However, the outlook for the future is very

now. However, the outlook for the future is very promising.

The Charles Warner Company, 810 Land Title Building, reports that trading for the last few months has shown a decided imporvement. Their retail yard on Thirtieth, below Walnut Street, is very busy. The outlook for 1909 is encouraging.

Henry Longcope, the manager of the Alpha Portland Cement Company, 910 Harrison Building, says business is commencing to slack up now, but that, taking the conditions of the last year into consideration, he has really no cause to complain over the volume of business done.

volume of business done.

The Whiteland Lime Company, Devault, Pa., reports that their plant is running about two-thirds

The Keystone Lime Company, Plymouth Mission,

Pa., is keeping fairly active.

The Cedar Hollow Lime Company, Cedar Hollow, Pa., has its hydrating plant going full force and has no complaint to make over conditions.

The McCoy Lime Company, Swedeland, Pa., is fairly busy at this time.

The Philadelphia Fire Brick Works, Vine above Twenty-third Street, reports "busy." Mr. Houck, of this concern, says that the plant is working full capacity and that good orders are coming in.

The Cyrus Borgner Company, fire brick and clay retorts, reports business still spasmodic and no buying ahead. They look, however, with good reason for good trading in 1909.

good trading in 1909. Charles W. Budd, a well known builder of this city, died on November 25. He was sixty-six years of age. died on November 25. He was sixty-six years of age.
Augustus G. Borkert, a prominent contractor of
Reading, Pa., died on December 13, aged seventy-

Bushkill Quarry & Construction Company,

The Bushkill Quarry & Construction Company, Easton, Pa., was incorporated under Pennsylvania state laws on November 19; capital, \$15,000.

The Drummond Concrete Sepulcher Company, Philadelphia, Pa., obtained a charter under Delaware state laws on November 20; capitalization, \$100,000.

The Royal Brick Company, Connellsville, Pa., was chartered under Pennsylvania state laws on December 14, capital, \$200.

; capital, \$75,000. The Colonial Wall Board & Plaster Company, Pittsburg, Pa., received a charter under Pennsylvania state laws on December 14; capital, \$25,000.

CHICAGO.

CHICAGO, Dec. 21.—Trade conditions among the local cement, lime, builders' supply and crushed stone men during the whole of 1908 have been excellent. The volume of building and construction has simply men during the whole of 1908 have been excellent. The volume of building and construction has simply been enormous. Chicago has experienced a veritable building boom and every one engaged in these lines has been benefited thereby. The local cement situation, we have endeavored to cover thoroughly in another article, and hence will not consider the conditions surrounding it here. The lime business has remained stationary so long that if any impetus were given to it, no one would be more surprised than the dealers themselves. Her full quotn of the business in this line has been secured by 1908, however, and the year can be classed as a good one. The builders' supply and crushed stone men have secured the cream of all the trade, especially the builders' supply men, although the crushed stone men have had a good year and can well boast of the results accomplished. Conand can well boast of the results accomplished. struction has been active throughout the whole Large jobs have been numerous and while all of these have not been finished, many more are being contemplated. The immense number of small or ordinary jobs have brought the total amount of the year's construction up to a fabulous figure and statistics show that Chicago has increased her building operashow that Chicago has increased her building opera-tions during the present year over that of last year by 394 per cent. And yet every one engaged in these lines predicts that next year's business will far excell that of the present year, and expect in addition quite an advance in prices. All indications do point that way and 1909 will not be very old, they say, before this will come to pass. this will come to pass.

this will come to pass.

E. J. Cormack, vice-president of the Wisconsin Lime and Cement Company, whose offices are in the Chamber of Commerce Building, states that business is good with them, that it has been good all the year and that trade is still active, no slackening up being apparent as yet. December will rank as a good month, even if not another order should be filled this

year.

In speaking of this year's sales and comparing them with those of last year, Mr. Cormack says that there is not a commodity, nor an article they handle, and they handle hundreds of different articles, but what the amount sold this year exceeded that sold in 1907. When we bear in mind that 1907 has been considered the estandard by which the business comparisons. 1907. When we bear in mind that 1907 has been considered the standard by which the business community has measured or estimated a good year, the showing made by the Wisconsin Lime and Cement Company this year is phenomenal. It proves conclusively that the conditions that have existed throughout this section of the country at least have been in a prosperous condition, and that building construction has not been idle a moment, With their thirty or has not been idle a moment, With their thirty or more hustling salesmen, their efficient heads of departments and the intelligent grasp of affairs of the officers of this company, to say nothing of the many conveniences and aids they have established for the benefit of their customers and of the courtesy that is extended to all, it causes no surprise to learn of the great increase in their business. Every branch of the building material line is handled by them, and the building material line is handled by them, and Mr. Cormack says that they carry fully two-thirds of all the contractors of Chicago on their books as regular customers. Their local trade is enormous. Two hundred and sixty head of horses are in their stables, and even this number is not sufficient to deliver the goods sold, as every day they are compelled to hire additional teams. They are now busy opening a new yard at Oak Park, erecting an additional warehouse and putting in switching tracks, in order to meet the increased demand that will so surely come next spring. Mr. Cormack is confident that next year will even be better than the one just coming to a close. Signed contracts are good facts to judge he does not feel that he is optimistic wi when stating that every one in the building material line will be more than content with the conditions that will pre-vail and the amount of business secured by each next

The officers of this company are: Joseph Hock, president; Edw. K. Cormack, vice-president; Adolph Loeffler, secretary, and Carl Ruedebusch, Jr., treasurer. The Wisconsin Lime and Cement Company was incorporated in 1900 and has grown and increased constantly year by year until now it is one of the largest factors in the builders' supply line in the entire West

entire West.

entire West.

J. W. Moulding, of the Thomas Moulding Company, offices Chamber of Commerce Building, states that the present year has been a good one, that business has been active throughout that entire period and that the fall trade has made them hustle. Just at present there is a lull and the quiet that usually prevails before Christmas is felt. In comparing the amount before Christmas is felt. In comparing the amount of business secured by them during the present year and that done by them in 1907, he states that 1908 showed the better results and speaks of the amount as very satisfactory. He says that November of this year is far ahead of November, 1907, and that December's business, up to date, has been more than he expected and can be classed as a fair month. Mr. Moulding states that he has not furnished the materials for so many large jobs but that the great num. rials for so many large jobs, but that the great num-ber of small buildings have kept them fully occupied. He is more than pleased with the future outlook and predicts that there is a great year ahead for all those engaged in the builders' supply business.

E. H. Jones, Chamber of Commerce Building, although well and favorably known in the plaster trade for the last eighteen years, only entered the com-mercial field on his own account last summer. Since then he has made himself felt and become a decided factor in this line. It takes time to establish a business and Mr. Jones does not claim to have accomplished wonders, yet he is well satisfied with the results attained. He has just closed the contract to furnish the plaster for the new LaSalle Hotel. This will require about 100 carloads: Mr. Jones is the sole agent for Chicago of the Acme Cement Plaster Company, of St. Louis, and it is their "Apex" brand that will be used. Large jobs are scarce and hard to get, Mr. Jones says, but the great number of small ones that have been so abundant this year, of which he has obtained his full quota, has made him feel content. He is exceedingly sanguine over the outlook ness and Mr. Jones does not claim to have accom-

he has obtained his full quota, has made him feel content. He is exceedingly sanguine over the outlook for next year, and predicts that 1909 will be a good year, a better year than the one drawing to a close, and that the conditions that confront the trade will improve as 1909 becomes older.

The Browneli Improvement Company, whose offices are in the Chamber of Commerce Building, speaking through Mr. Hodgkins, states that business conditions at the present time are fair, although the season is over and construction must necessarily be almost at a standstill till spring. He says that 1908 has been at a standstill till spring. He says that 1908 has been a good year, but in comparison with last year it makes a poor showing. He estimates that the busimakes a poor showing. He estimates that the business secured by them during the present year will not exceed 75 per cent of that done by them in 1907, and states that this condition existed persistently and constantly throughout the whole of 1908, each month showing the same lamentable decrease.

The Brownell Improvement Company are large con tractors for extensive railroad work and have devoted a great deal of their attention to this particular line. They have had, for some time, a contract with the Fort Wayne Railway, the Lake Shore Railroad and the Lake Eric and Western to furnish all the concrete used by them in ballasting their roads and for other purposes. About 50 per cent of the entire output of their quarry, which is located at Thornton, Ill., is used in railroad construction work, and whenever such work is to be done they are to be reckoned

Mr. Hodgkins thinks that the future prospects are Mr. Hodgkins thinks that the future prospects are excellent, that 1909 will be a much better year than 1908 and will fully equal the prosperous years 1906 and 1907. He says that all indications point to great improvements being undertaken next year, especially in country roads, and reiterated the statement that in his opinion the railroads would in the future use a greater quantity of crushed stone for ballasting their tracts. Mr. Hodgkins should be an authority on this subject, at least his opinion is worthy of the profoundest attention. foundest attention.

A. C. O'Laughlin, speaking for Jas. and A. C. O'Laughlin, whose offices are at 172 Washington Street, says that the season is now practically ended; that in reviewing the present year's business, he pronunces it a good one, and states that with them the number of orders secured and amount of business days has equalled fully that obtained by them during done has equalled fully that obtained by them during 1907. November was a good month for them and until the change of weather came in December, that month's business was also good. They have furnished the material for no large jobs recently, but have been constantly employed on numerous small ones, which Mr. O'Laughlin says is much more remunerative.

Their quarry and crushing plant is located at Bellewood, Ill., and is complete in all its details. We gave a full description of their operations in our last issue, and hence feel that no further comment in

regard thereto is now necessary.

regard thereto is now necessary.

Mr. O'Laughlin thinks that the future outlook is exceedingly promising, that there will be an increasing demand for crushed stone from this time on and that the many uses to which it may be put is just beginning to be appreciated. He predicts that next year will be a good one, even better than the one now almost over, and that 1909 will take rank as a banner year. He also is express believer in improved country.

year. He also is a great believer in improved country roads and states that in his opinion much of this will be undertaken next year.

Mr. Heinemann, speaking for the Western Stone Company, whose offices are in the Chamber of Commerce, states that the year just drawing to a close has been a good one. Business has been fair throughout its entire length and the total result has been more than they expected. Comparing the amount of business secured by them in 1908 with that done during the previous year, Mr. Heinemann says that there is very little difference, either in volume or amount. The last year may make a little better showing, but it will not be large. Although the season is about over, with their quarry shut down, December has been a fairly good month, and the conditions that govern trade look good to them. They will not attempt to resume operations at their quarry before April, but as the supply of crushed stone on hand is quite large, they do not fear being unable to meet all demands they do not fear being unable to meet all demands that may be made on them.

Mr. Heinemann states that they have not furnished the material for any large jobs recently, that is for any that they desire to call attention to, but the demand for their material has been steady and con-

stant, although distributed in comparative small quantities to numerous parties.

They are quite optimistic over the future outlook They are quite optimistic over the inture outdook and predict that next year will be a very good year indeed. All the crushed stone men view the coming year through rosy glasses, and there is every indication that they are right in doing so. The Western Stone Company is no exception, and think that there will be a wonderful era of road building and road belleting undertaken during 1909. ballasting undertaken during 1909.

ballasting undertaken during 1909.

Y. P. Henderson, of the Chicago Union Lime Works, Chamber of Commerce Building, states that business conditions at the present time are slow, but that the indications are that trade will be good right through the winter. In speaking of the year 1908 and comparing the volume of business secured in that year with that done in 1907, Mr. Henderson says that the present year has not been a boom year, but that it has been a good one; that the volume of business contracted for by them has fully equalled that billed during the previous year and that they are content and pleased with this year's sales.

December is hardly making the showing that the previous months did and they are now experiencing the lull that, Mr. Henderson says, generally exists at this time of the year.

this time of the year.

It was the Chicago Union Lime Works that furnished all the foundation stone for the Northwestern Terminal and many other jobs in connection therewith. It is the small jobs that pay, and Mr. Henderson states that they have furnished the material on an immense number of small contracts.

The future outlook appears bright to them. Many

important matters are now being discussed and fig-ured upon at their office, and if these different con-tracts are secured, the prospects for 1909 will no longer be problematical but assured. Aside from this, however, they say all indications point to 1909 being a great year and they feel assured that that year will witness a remarkable revival in construction.

The Waukesha Lime and Cement Company is mak-

ing arrangements to put in a yard at Devon and Evanston Avenues for the retailing of builders' sup-plies. The C. M. & St. P. Ry, has put in a switch

Gold Williams, speaking for the Marquette Cement Gold Williams, speaking for the Marquette Cement Manufacturing Company whose offices are in the Marquette Building, states that the condition of the market at the present time is good, although business is quiet. Trade has held up well all through the year and 1908 can be classed as very satisfactory. The volume of business obtained cannot be complained of, but prices have been very unstable and an exceedingly disagreeable, cut throat market has existed for most of the time. They sincerely trust that this condition of the time. They sincerely trust that this condition will not extend far into next year and are very hopeful in regard to the future outlook.

They are running steadily, laying up stock for all emergencies and will be fully prepared for any contingency that may confront them. They have se

cured no large orders recently, although they feel that they must have obtained their share of all such orders placed throughout the year. Mr. Williams_was very conservative in all his statements. The Marquette will have an exhibit at the Cement Show at the Coliseum and would be more than pleased to have all their friends, acquaintances and any and all who are interested in cement or the many interests with which it is identified to cell and see them which it is identified to call and see them.

George de Smet, whose offices are in the Chamber Commerce Building, states that he is quite busy in finishing up the season's work, that trade has been active all the year and that 1908 has been a good year for him. The volume of business has been equally as for him. The volume of business has been equally as large, if not larger, in the present year as it was last and the amount sold will almost be as much in dollars and cents as in 1908. He is still furnishing cement for the Lindsay Light Building, the Chicago Shipping and Receipt Book Company, which required 2,500 barrels and the Armour Wool House, which took 4,000 barrels. Only recently he closed contracts with the St. Stanislaus School, Thirty-third and Auburn Street St. Stanislaus School, Thirty-third and Auburn Street for 1,500 barrels; the Loyola University, Hays Avenue and the lake, for 3,000 barrels and the Sacred Heart Academy, Pine Grove and Gray streets, for 1,000 barrels, and with quite a number of others for smaller quantities. He is well pleased with the business done during the year just coming to a close and seems to think that all others engaged in selling cereate the street of the second security. ment should be equally content.

In addition to his cement busines, Mr. de Smet has built up a good trade in Dehydratine. The Tuberculosis Hospital is being painted with this compound; also the residence of Richard T. Crane, Lake Shore Drive and North Avenue, and the Chicago City Bank, Englewood Avenue and Halsted Street, thus ing the limestone in these building from ever thus prevent-

ing the limestone in these building from ever becoming stained, and preserving their purity and beauty. He thinks that the coming year will even excel 1908 in the volume of construction, and that trade will be more than good. He has already closed a number of contracts for spring work and thinks that the cement manufacturers will all be kept busy and that 1909 will bring satisfaction to the hearts of everyone. He intends to make an attractive display at the Cement Show, giving prominence to Vulcanite at the Cement Show, giving prominence to Vulcanite and Berkshire snow white cement. Certainly his waterproofing compounds will also be on exhibition. He cordially invites all to call at his booth.

Fred J. Morse, who so well and ably represents the Sandusky Portland Cement Company, whose offices are in the Chamber of Commerce, states that the market has been strained all through the present year; that the railroads used very little cement in comparison with the preceding years, and owing to the great cut in prices that has prevailed for so long a time 1908 cannot be classed as a satisfactory year. November showed a great falling off in trade when compared with October, and December sales make a poor showing. The season is now practically over and as December is usually a poor month, he said this condition was to be expected. And yet with all this, the number of sales made and the volume of business secured, he thinks, will fully equal those of 1907. Poor prices, though, make poor business, and 1907 ranks far ahead of the present year, when figuring up the amount sold.

They have recently secured several nice orders for eir cement, twelve thousand barrels being used in their cement, twelve thousand barrels being used in the Western Avenue sewer and another twelve thou-sand barrels were placed in building the Furniture Exhibition warehouse, the largest storage warehouse in America, which is located at North Pier.

Having four factories, Bay Bridge (Sandusky), O.; Syracuse, Ind.; Dixon, Ill., and York, Pa., where the far-famed Medusa White is made, the Sandusky Portand Cement Company are always in a position to fill all orders promptly and expeditiously, shipping goods from their nearest depot, thus not only saving time in the delivery but also in cost of freight. Their capacity is about six thousand barrels per day.

W. C. Barry, assistant to J. C. Van Doorn, north-western sales agent for the Universal Portland Co-ment Company, was in their office when the ROCK PRODUCTS representative called on Mr. Beck. Mr. Barry reports in regard to the northwestern situation that while cement is not moving very rapidly now, there is every indication when spring opens up that they will have all the business they can take care of. they will have all the business they can take care of. Their business there has been so large lately that they were compelled to double their office space and increase their sales force. He states that at present Universal is being used in a number of large reinforced concrete buildings in Minneapolis, and mentions among others the New Minneapolis Hotel, a building which represents the latest type of reinforced concrete; the new Commercial Club Building, and the Firman Ford Building. Mr. Barry says that Mr. Van Doorn is devoting all his time to promoting the Northwestern Cement Products Convention and Show, which meets in Minneapolis March 2-5. and of Show, which meets in Minneapolis March 2-5, and of which he is the secretary.



The National Builders' Supply Association

Meets Semi-Annually. OFFICERS.

Gordon, Willis, St. Louis				
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Arkansas				
GeorgiaV. H. Kriegshaber, Atlanta				
Iowa				
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Louisiana				
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Rhode Island				
South Carolina				
Tennessee . J. C. Lovelace, Memphis West Virginia R. W. Marshall, Wheeling Wisconsin . R. C. Brown, Oshkosh				
The state of the s				

EXECUTIVE COMMITTEE.

Gordon Willis, Chairman; Frank S. Wright, Chicago; Jol A. Kling, Cleveland; Charles Warner, Wilmington; J. C. Adar Pittsburg; Richard Kind Toledo; James G. Lincoln, Bosto Official Organ, ROCK PRODUCTS.

Following is a list of conventions to be held in the interests of retailers of builders' supplies. both state and national:

Retail Lumber Dealers' Association of Indiana, at Indianapolis, January 13-14-15.

Tri-State Retail Lumber Dealers' Association, at Evansville, Ind., January 19-20.

Union Association of Lumber Dealers of Ohio, at Toledo, January 19-20.

Northwestern Lumber Dealers' Association, at Minneapolis, Minn., January 19-20-21.

Nebraska Retail Lumber Dealers' Association, at Omaha, January 21-22.

Southwestern Lumber Dealers' Association, at Kansas City, Mo., January 26-27-28.

Ohio Builders' Supply Association, at Toledo, February 2-3-4.

Southern Illinois Retail Lumber Dealers, at Cairo, February 4-5.

National Builders' Supply Association, at Louisville, Ky., February 9-10. Michigan Retail Lumber Dealers' Association, at

Grand Rapids, February 9-10-11.

Illinois Retail Lumber Dealers' & Illinois Masons' Supply Association, at Chicago, February 16-17-18.

Mason Material Dealers' Association of New Jersey, at Newark, March 11.

Will Have Interesting Program.

Harry S. West, corresponding secretary of the National Builders' Supply Association, writes us: "The committee having in hand the details for the coming convention at Louisville are working with a view of making the meeting the most interesting, from both business and social standpoints, of any session yet held.

session yet held.

"The headquarters will be at the Seelbach Hotel, which is the leading hotel of the South, and the management have given us for our use a commodious convention hall; also additional space for exhibit purposes, so that delegates attending the convention and stopping at the Seelbach will not be inconvenienced in any way should the weather not be what we hope to have it.

"Our program has not yet been completed, but

the fact must not be lost sight of that our sessions, executive and open, will be interesting and for this reason we want to impress upon those who visit Louisville the importance of attending business sea-

"The social functions, which are always of ma-terial benefit, should likewise be attended and in this connection the plan of last year, which proved such a decided success, will, in a certain measure, be followed.

"As previously stated, our effort will be to make this convention 'the best ever.' We not only want to see every member of the association present, but also desire that he take upon himself the responsibility of having one prospective member accompany him, as we propose making the meeting especially interesting and enjoyable to them.

"We hope to be able to give you a complete program for the next issue of ROCK PRODUCTS."

Meeting of the Pittsburg Local.

Meeting of the Pittsburg Local.

PITTSBURG, PA., Dec. 10.—Sixty-five members of the Pittsburg Builders' Supply Association gathered at their annual meeting and banquet, which was held at the German Club the evening of December 8. Royal good fellowship and a splendic all-around good time resulted. Business cares were laid aside in order that the company might enjoy to the full the fine entertainment provided. At the head of the banquet board was James W. Wardrop, former secretary of the Merchants and Manufacturers' Association, and known throughout Pennsylvania as "the prince of toastmasters." A popular orchestra enlivened the early stages of the evening's entertainment, and when the time was ripe for real fun two vaudeville acts were introduced which nearly collapsed the banqueters. The meeting was by far the most successful



GRANT S. MURRAY, PITTSBURG, PA

which the association has held in its five years' exist-

The officers of the association who had been re-The officers of the association who had been reelected at the last regular business meeting before
the banquet are: President, John Strauss, of Knox,
Strauss & Bragdon; secretary and treasurer, Grant
Murray, of Murray Brothers, North Side. The association now includes several thriving firms in Homestead, Braddock, Wilkinsburg and McKeesport, and is
growing steadily. It has never been in so flourishing
a condition as now, and its efforts to serve the interests of the builders' supply firms in Pittsburg
have been very profitable to all concerned the past
year.

Retailers in New York.

As announced in the September number of ROCK PRODUCTS, the Sewer Pipe Distributors' Association, comprising the principal retailers and jobbers of builders' supplies in the States located east of the Mississippi River, held a meeting at the Hotel Knickerbocker, New York, on December 8, 9 and

President Arthur N. Pierson, of Arthur N. Pierson & Co., New York, was in evidence early, and it was soon apparent that there was to be quite a gathering of the clans. The cement manufacturers were holding their annual convention at the same hotel, and the big retailers and distributors of the country enjoyed cordial greetings of their acquaintances in the cement manufacturing business, many of them being heavy handlers of cement.

The attendance consisted of C. H. Classen, of the

Maryland Lime and Cement Company, Baltimore; L. F. Fleishman, of Fleishman & Armstrong, Dunkirk, N. Y.; E. M. Walton, of the Youngstown Ice Company, Youngstown, O.; J. M. Campbell, Passaic, N. J.; J. E. King, Meriden, Conn.; Max E. Miller, Warner-Miller Company, New Haven, Conn.; James G. Lincoln, Waldo Brothers, Boston, Mass.; W. W. Coney, Moores-Coney Company, Cincinnati, O.; Charles Schaefer, Schaefer & Gengnagel, Dayton, O.; A. E. Bradshaw, Indianapolis Mortar and Fuel Company, Indianapolis, Ind.; Joseph Degnan, Toledo Builders' Supply Company, Toledo, O.; A. E., otherwise "Abe," Lincoln, "Washington, D. C.; J. C. Adams, D. J. Kennedy Company, Pittsburg, Pa.; George N. McAlarney, Wilkes-Barre, Pa.; C. H. Bowman, McKeesport, Pa.; F. W. Owsley, Steubenville, O., and C. W. Evans, Uhrichsville, O.

They held three sessions and talked over the whole subject of distributing sewer pipe, every man present being convinced that the selling price during the past season has got so low that it is practically impossible to deliver the goods even if they figure to do business without a profit. Several distributors expressed the intention of abandoning the sewer pipe branch of their business unless some plan could be devised whereby such goods could be handled without a certain loss.

There are so many questions involved, such as

devised whereby such goods could be handled without a certain loss.

There are so many questions involved, such as freight classification and breakage, that it seemed impossible to work out any good plan of improvement, so that the meeting closed with the feeling that the "talk fest" had been beneficial in a general way, but that no definite plan could be adopted to take care of the impossible difficulties into which the sewer pipe trade has fallen. trade has fallen.

Business in this line has been particularly bad the past year, owing to the fact that many municipalities have refrained from puting in sewer improvements on account of the rumors of the financial depression, which either did or did not materialize. Nevertheless the orders for sewer pipe were lacking. Much less business has been done in this line than in former

Jersey Brick Men Agree at Last.

Hackensack, N. J., Dec. 1.—The Hackensack River Brickmakers' Association was formed here today, embracing all of the brickmakers in the Hackensack district, consisting of James W. Gillis, the Mehrhof Brick Company, M. Mehrhof & Co., I. E. Gardner, C. E. Walsh, E. Schmultz, Treviranus & Gardner, M. B. & L. B. Gardner, and Philip Mehrhof. These concerns represent a total output of 80,000,000 brick per annum, and at their initial meeting succeeded in equalizing territorial rates of freight and prices of their material upon an intelligent basis, which is very gratifying to retailers of masons' supplies who handle their goods in quantities in the complex territory in the environs of Greater New York, where much the larger part of the product made in the Hackensack district is consumed.

Great Association Worker.

J. M. Campbell, Passaic, N. J., is a retailer of supplies who has been an active member of the New Jersey State Association since it was formed a number of years ago. Mr. Campbell says that the New Jersey Association now comp.ises fully two-thirds of the retailers doing business in that State, and that when they come to hold their next meeting in March it is hoped that every man in the business in New Jersey will become a member. He expects to be at the Louisville convention and remarks that in a recent interview with James W. Wardrop, the executive secretary of the National Builders' Supply Association, he was suggesting some plan for cooperation and representation of the New Jersey State Association with the National. Mr. Campbell holds that the National Association as the central organization, the mother hen as it were, could have chicks in the shape of State associations that could take care of the local proposition and the cooperation of the near neighbors in the business, while the National can more intelligently look after the great matters, such as freight rates and heavy shipments, that would secure but little or no attention from a State organization. Mr. Campbell has some very well developed ideas on the subject of organization, and certainly the practical workings of the New Jersey Association shows that the New Jersey idea could well be examined by other State associations with a view to improving their methods and influence as well as the benefit to individual members. J. M. Campbell, Passaic, N. J., is a retailer of sup-

The Pan-American Portland Cement Company, of Jersey City, N. J., has been incorporated to sell and manufacture Portland cement. The capital stock is \$100,000. The incorporators are S. A. Anderson, L. H. Gunther and John R. Turner.

Big Baltimore Builders' Supply Dealers.

One of the prominent retailers in the Eastern States, who has been a factor in the National Association as well as in anything that was instrumental in improving the business, is Charles H. Classen, who is proprietor of the Maryland Lime and Cement Company, of Baltimore, Md., their offices being located in the Carroll Building, Baltimore and Light Streets, with branch houses and yards at Oak and Twenty-fourth Streets, 1211-13 South Charles Street, and Central and Eastern Avenues.

fourth Streets, 1211-13 South Charles Street, and Central and Eastern Avenues.

Mr. Classen handles Lehigh Portland cement, white lump lime, Niagara wall plaster, the Tiger brand white rock finish, Keene's cement, fire brick, roofing, tile, sewer pipe and everything that would fit out the contractor or builder for completing the construction of any sort of building. His business has been established for a number of years, and he has gained the prestige of delivering quality goods at the right time. Thus the business has grown materially year by year. Following the fire, when their main office and docks were destroyed, they sold this property to the city of Baltimore and located their warehouses for the best delivery, promptly getting the material for the best delivery, promptly getting the material on the ground. They have always made it a rule to specialize so that their customers could get practically anything they wanted, and their catalog tells the

anything they wanted, and their catalog tells the tale.

Several years ago Henry W. Classen, the son, became an active worker in the business, and has recently been made a junior partner. He is treasurer of the National Builders' Supply Association, succeeding his father, and is active in the conduct of the business. They have recently issued to their trade a booklet showing their full lines, also pictures of their plants, with data in reference to the manufacturing ability of the concerns which they represent. As an illustration, they handle Lehigh Portland cement, with a capacity of 8,000,000 barrels yearly. This gives some idea as to the possibilities of supplying any order. They also handle Rosendále natural cement, and La Farge as their non-staining cement. They also handle White Portland, Medusa waterproof compound and other specialties of this character.

With warehouses sufficiently large to carry a good stock, be it crushed stone, expanded metal, pipe fittings, or wall coping, you can always find it at their yards. You can see for yourself by the pictures of the warehouses printed on this page that they are equipped to handle the largest or smallest job of construction in Baltimore.

Fort Wayne Builders' Supply Dealers.

Fort Wayne Builders' Supply Dealers.

Ft. Wayne, Ind., Dec. 17.—The Moellerings have been identified with the upbuilding of Ft. Wayne to such an extent that there should be several streets named after them. William Moellering, who is now 78 years old, but still active in the business, was one of the first men to engage in the builders' supply business in this section of the country. Today he is identified with a number of subsidiary institutions and still personally directs the affairs of a great portion of the business. He is assisted by his two sons, Edward, who has charge of the building material end of the business, and Charles, who looks after the contracting and the coal end of the business, and H. A. Gerberding, who is also in the coal department. William Moellering personally looks after the brick business.

To give some idea of the extent of their operations



AREHOUSE MARYLAND LIME AND CEMENT COMPANY, 421 S. CENTRAL AVENUE

we will have to go into detail. The building material business is conducted under the name of William Moellering's Sons, and they are not only dealers in every character of material which goes into the construction of a building but also handle a full line of struction of a building but also handle a full line or paints. They have immense warehouses, where they carry complete stocks, making a specialty of well-known brands, as their long connection with the business enables them to make choice of the materials for their customers. They handle the Ohio & Western Lime Company's lime, American Gypsum Company's plasters, Onyx Gravel Roofing and Alpha, Lehigh and Omega cements. Omega cements.

Their business is conducted a little different than the average builders' supply houses, as they are job-bers as well as dealers and travel three men, covering the northern half of Indiana, western Ohio and southern Michigan. They have a large business worked up in this territory and number among their customers the best dealers.

Mr. Moellering is building an extensive loading platform with a concrete foundation alongside of one of his warehouses to facilitate the handling of his

These warehouses cover three acres and have three sidetracks. The main warehouse is 50x150 feet, two stories in height, of brick construction, with a concrete foundation and a seven-foot cellar underneath the entire building. He is also remodeling the interior of one of these houses and will put in a display room 10x20 feet, finished in mission style. He will have panels arranged along the side of the wall showing various styles of pressed brick and will have complete exhibits of cements, limes, plasters, paints, roofing, metal lath, corner beads and in fact everything required in building, so that the architect can bring These warehouses cover three acres and have three ing, metal lath, corner beads and in fact everything required in building, so that the architect can bring his client to the showroom and let him inspect the materials. This has been found by actual experience to be a very good idea and is one that should be adopted by all of the builders' supply houses in this country. Mr. Moellering says that his display room will be so attractive that ladies will enjoy looking over the materials as much as they would the selection of furniture or any other appurtenances which

Mr. Moellering says that the outlook for the coming year is exceptionally bright, as there are quite a number of very large structures on the boards which will no doubt be given out early in the season.

Speaking of prices, he said that prices in Fort Wayne have always been fair. While the dealers have no actual understanding, they are friendly and do not believe in cutting each other's throats and giving the public the benefit.

William Moellering, the father of the boys and the founder of the business, who, by the way, was a pioneer in the business in this section, only recently rebuilt his brick yard and personally directs this end of the business. The output is handled by the firm of William Moellering's Sons. Only building bricks are made, as the material for making firebrick is not available.

Another branch of the business is the Wabash Stone Company. There is an immense limestone quarry located at Wabash, Ind., and the output is crushed with a No. 3 Gates crusher and handled at the main offices at Fort Wayne. Business in this branch has been exceptionally good as they have their entire output practically disposed of always in advance.

advance.

Still another branch of their business is their concrete work, which is run under the firm name of the Moellering Construction Company. During the past year they did over a quarter of a million dollars' worth of this character of work. They laid over 350,000 feet of sidewalks, in which Lehigh Portland

worth of this character of work. They laid over 350,000 feet of sidewalks, in which Lehigh Portland cement was used.

Speaking of the business in Fort Wayne, Ed. Moellering said that they had had an exceptionally good season. The majority of the buildings erected were very large structures, requiring considerable amounts of material. The largest were the Hotel Anthony, which will be ready for occupancy next month, and the Scottish Rite Temple, at the corner of Washington and Clifton Streets.

The Trentman Supply Company also does a large business in builders' supplies. Charles Mueller, manager, was a witness in a case being tried in one of the local courts, and the Rock Products representative was unable to interview him.

Kruse & Bushing have had a big season. Their last month's business was especially large. They handle Sandusky, Wolverine and Whitehall cements, as well as a complete line of the better grades of builders' supplies, and have a well-stocked warehouse and yard. They furnished the Medusa brand for the interior of the Anthony Hotel and also for the Indiana Furniture Building.

E. M. Baltes & Company, who are also large operators in building materials, carrying an immense stock of every character of material known to the trade, say that the past season's busines has been exceptionally good.

Theodore Schweirin, who is a member of the firm,

trade, say that the past season's busines has been exceptionally good.

Theodore Schweirin, who is a member of the firm, happened to be down at the quarry, which is at Montpelier, Ind., when the Rock Products representative called. Ed. Baltes, however, did the honors and said that the crushed stone business was exceptionally good. The quarry is of blue limestone and the plant is thoroughly equipped to take care of the large output. An Austin No. 5 does the crushing.



MARYLAND LIME AND CEMENT COMPANY'S WAREHOUSE AT 1211-13 S. CHARLES STREET, BALTI-

W. M. Baltes, who is still the head of the concern, W. M. Baites, who is still the head of the concern, is seventy-two years old and is always on the job. At the present time he and his son are personally directing the remodeling of the building directly opposite the new Anthony Hotel. When they remodel this building it will be known as the Baltes Hotel and will contain fifty-seven rooms, modern and firewark toward of the Evrent the Evrent to proof in every respect and operated on the European plan. Knapp & Moreland will be the managers.

The entire interior of the building has been removed and U. S. Gypsum macalite fireproof tiles have been installed for wall partitions. The floors will all be covered with cement and the wires and pipes will be laid in conduits under this three-inch cov-

The building is four stories in height and will have electric elevators, hot and cold water in each room, telephones, and, in fact, every modern convenience. The furniture, which has already been selected, is of mahogany. The decorations in the rooms will be varied in color. In all of the places where steel can be used in place of wood, such as doors and windows, this material has replaced the wood.

Lehigh Portland cement has been used throughout the building. The office will be laid with artistic tile. Fort Wayne is woefully shy of good hotels and when these two new ones are opened to the public there is no doubt but what they will be gratefully received.

The Fort Wayne Builders' Supply Company combines the lumber business and the builders' supply business. They have a planing mill in connection with their office and yards. The officers of the company are Ferdinand Meier, president; Henry L. Mollett, vice-president, and John Suelzer, Jr., secretary and treasurer. Mr. Suelzer said that they have enjoyed a nice business. Their sales last year were equal in volume to those of any year and on the whole they have no complaint to make. He says that Fort Wayne has had a good building season and from what has already come out, it would seem as if next year would be a record-breaker. One of the jobs which they furnished materials for was the Bloomingdale school, as well as several other big school houses; the Elks' Building, the Wayne Knitting Mills addition, the Foster Waist Factory and the People's Trust Building, a six-story bank and office building. Among the buildings contemplated for next season are a seven-story office building, to be built on the site of the Aveline Hotel, which was burned down. burned down.

In most of the large buildings which have been erected all of the builders' supply concerns above mentioned have had some hand in the furnishing of materials. For instance, in the Anthony Hotel, the Scottish Rite Temple and the Indiana Furniture Building, part of the supplies were furnished by one concern and part by others.

concern and part by others.

This Scottish Rite Temple will be a very notable addition to the handsome buildings of Fort Wayne. Mahurin & Mahurin, of Fort Wayne, were the architects. The building is two stories, fireproof throughout and built of buff Bedford stone and cost about \$300,000\$. The Indiana Furniture Building, for which Henry Hackemeyer was the architect, is of reinforced concrete throughout and will be five floors in height. The People's Trust Building is a six-story bank and office building. The new Anthony Hotel, the lower floors of which were built of buff Bedford limestone, will be a notable addition to the hostelries of Fort Wayne. It is an immense, fire-



EASTERN WAREHOUSE, MARYLAND LIME AND CEMENT COMPANY.

proof structure, containing all the modern conveniences, and would be a distinct credit to any city. It will be open to the public within the next month.

A Line of Building Specialties.

There is no topic which is more interesting to the retailer of building supplies than that of considering one good path for extending the scope of his business. The indispensable lines of cement, lime, plaster and clay goods will naturally receive their full quota of attention on account of their preëminence in making up the largest part of the business. However, these main staples are not always the most profitable end of the business. Those building-supply concerns that have built up a trade in specialties of steel, such as corner bead, metal lath, expanded metal, roofing. and what not, have found this department to be the best paying end of their business, when the amount of money invested, the margin and the low price of delivery is taken into consideration.

In the whole range of building specialties there has recently appeared in the market one that especially appeals to the enterprising retailer, namely, the Parker steel corner bead, which is manufactured by the Sharon Steel Hoop Company, whose general sales offices are located in the Commercial National Bank Building, Chicago, Ill. This bead is made from hot galvanized steel. In cross-section it is a miniature T rail, which expresses with the minimum amount of steel the greatest rigidity and strength. The Parker bend has already been successfully introduced among the leading plastering concerns of New York, Chicago and other principal markets of the country. Since it is heavily galvanized, it can never rust, and with the present low quotations of all commodities of steel, which are certain to advance as the spring comes on it looks good now.

If the Parker corner bead is not known in your

If the Parker corner bead is not known in your market, it will take but little difficulty in introducing it successfully, for plaster corners sustained by this bead have never laid a single instance of failure in its record, and it is to be found in use in some of the principal buildings in the cities mentioned above. Harry T. Gilbert is the sales manager of this specialty, and he will be glad to communicate with retailers and distributors of supplies who want to consider this best corner bead ever made in connection with next year's business to put in an early stock.

stock.

To lay in a stock of such goods at the present time somewhat resembles the buying of steel shares on a rising market, for with a line of goods which can never deteriorate in any way and which is certain to advance steadily in the near future, it looks like good business, and this tip is handed out to buyers of specialties who are now scanning the horizon for the good things to make business with in the coming season.

Believes in Advertising.

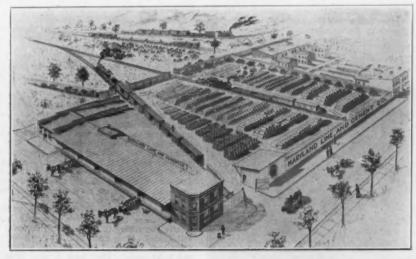
South Bend, Ind., Dec. 16.—C. H. DeFrees certainly believes in advertising, as every street car in the city carries one of his cards. While we believe the general idea brought out is very good, the advertisment is not explicit enough nor does it set forth clearly enough the points which we believe would appeal to the average reader. The ad. reads as follows: "DeFrees' art sandstone lawn vases, Portland cement, concrete stone and sewer pipe, plaster and lime. C. H. DeFrees, 315 South Taylor Street." This advertisement is flanked on both sides with cuts of lawn vases. Mr. DeFrees has made quite a success in South Bend and built up a large business by his aggressive methods. his aggressive methods.

Opening Another Yard.

Houston Brothers Company, of Pittsburg, have lately leased from the Pittsburg Junction Railroad Company a large corner lot at Liberty Avenue and Thirty-second Street, Pittsburg, which they are rapidly filling up with stock. This concern also has another large storage lot nearby and also two big warehouses, besides a good-sized plant in the East End. The firm is making a specialty of handling metal lath, sash weights and several other articles which are not usually included in the stocks of builders' supply firms here. Mr. Houston reports inquiries very promising, but says that as yet the harvest of orders which may be expected has not come.

The Edison Portland Cement Company expects to have a very attractive exhibit at the Cleveland Cement Show in Cleveland, January 11-16, 1909. Among the many interesting things in connection with the manufacture of Edison Portland cement they expect to put on exhibition a number of sample castings of the famous Edison poured concrete house, as they have obtained permission from Thomas A. Edison to feature these castings. Concrete flowing under gravity is certain to interest the architect, engineer, contractor, builder and layman. The economical value of such a process is sure to be appreciated.

The Cement Storage Company, of Milwaukee, Wis., has been incorporated for \$50,000 by C. C. Russell, J. W. B. Van Houten and Wm. A. Jackson.



NORTHERN WAREHOUSE, MARYLAND LIME AND CEMENT COMPANY.

Scribo Visits the Dayton Supply Dealers. 3

DAYTON, OHIO, Dec. 12.—There has not been the amount of building done this past season that there was last, but taking it as a whole, it could have been worse. There were several very large jobs finished this season, which required considerable material, and all of the supply men got their share. The prospect for next season are bright, although there are bufew very large projects determined upon so far However, it is too early to figure just what will hap pen. The consensus of opinion is that business will The prospects

revive shortly.

There have not been the number of brick residences built that has always characterized the season in this city. This is a great city for building and loan associations and in former years this has meant much to the building fraternity. For the past year these companies have practically made no loans. The class of people who usually put their money in these ventures have had to use it in other ways. Some of the oldest companies in the country are located here and some of the strongest. Luckily they weathered the financial storm all right and next year they will probably get busy again. During panicky times they have to shut down on their leans almost entirely, as when there is nothing coming in there can be noth

will probably get busy again. During panicky times they have to shut down on their loans almost entirely, as when there is nothing coming in there can be nothing going out.

The Memorial Building, which is now in course of construction, is one of the largest and most important projects in hand this year. W. W. Stillwell, of LaFayette, Ind., is the general contractor for the work and A. Soupart is the superintendent in charge of construction. The Hall-Conon Construction Company are the sub-contractors for the reinforced concrete work. The exterior is of gray pressed brick, with stone trimmings. Lehigh cement is being used. Dayton has one of the largest concrete block warehouses to be found anywhere. It is the car shops of Barney & Smith. Gabler, Deeter & Company were the local contractors. The building is approximately 800 feet in length and 300 feet wide.

One of the oldest builders' supply concerns in this section is T. D. Eichelberger's Sons, who were established here in 1869. J. W. and A. W. are the active heads of the business now. J. W. was out on his annual hunting trip when the Rock Products man called, and A. W. did the honors. He said that one good thing about the past season's business was that prices did not get so badly demoralized as they did in some other localities. They have strengthened up a bit lately and before long they will be where they were a year ago. The picture printed herewith is the entrance to the main office. Barney Tiegler is shown standing to the right of the doorway. He is one of the leading contracting bricklayers and a member of the firm of Tiegler Brothers. They also own their own brickyards. Mr. Tiegler is quite a character and is really a diamond in the rough. His heart is as big as his body and he has a good word for everybody. He could have been elected sheriff at the recent election, but refused to allow his name to be used. They say he would have made a poor sheriff anyhow, as he is so good-hearted that he would not want to see anyone locked up. He is an expert bricklay many a year, is shown standing to the left of the doorway.

T. D. Eichelberger's Sons have large warehouses running back for a square and a half on both sides at Fifth and Simpson Streets, and also a large warehouse at the P. C. C. & St. L. freight depot. They carry a complete line of building materials of



OFFICE BUILDING OF T. D. EICHELBERGER'S SONS, DAYTON, O.

all kinds. They are the local agents for Atlas Portland cement and have sold vast quantities of it during the time they have been in business. They were among the first to handle it, and they still swear by it. The State Hospital and the Soldiers' Home both specify Atlas in their work and have used a considerable quantity from time to time. They handle other brands, but have always pushed the Atlas. In lime, they handle both the Ohio and Western Lime Company's brands and a local lime manufactured by H. B. Shoup. In discussing the present uses to which cement is put, Mr. Eichelberger said that many of the uses now regarded as new were in reality old. Back in 1870 he said he had made and laid cement pipe which are good today.

Some solid concrete blocks made thirty years ago with Louisville cement are used in the sidewalk on

with Louisville cement are used in the sidewalk on the side of the office. There were some that were left over out of a lot made to pave a cellar at that

left over out of a lot made to pave a cellar at that time and after laying around for a number of years were finally put to use as described.

Some sidewalks across the street from the present offices of the company and in front of what was then the offices of the same concern, are some concrete sidewalks made of an English cement, known as K. B. & S. These have been down at least twenty-five years, so Mr. Eichelberger states. At the time they were laid they were put down with a dry face and were steel troweled. They are no doubt the oldest concrete sidewalks in the city of Dayton and are est concrete sidewalks in the city of Dayton and are

est concrete sidewalks in the city of Dayton and are still in good condition.

The Dayton Fiber Plaster Company have had a very good season, but it could have been better. The firm is composed of J. E. Parrott, president and general manager, and H. E. Parrott, secretary. H. E. Parrott is the father of the president and is one of the pioneers in the industry. Their business con-

sists in the manufacture of a wood fiber plaster and a rock wall plaster, which is a hair plaster. They are at present filling an order for wood fiber plaster for a firm in Wellington, New Zealand. The order is for 50,000 pounds, or a full carload. It will be shipped in waterproof packages. The bags are being specially made for this shipment by the Akron (Ohio) Paper Bag Company. They will be made especially strong and waterproof on the inside.

When the ROCK PRODUCTS man called at the office of Schaefer & Gengnagel he found C. W. Schaefer in charge. Mr. Gengnagel was making preparations to go hunting and shortly afterward called up his office from his home, saying that he was ready to go and wanted to know just how many birds it would take to supply the office. This would seem strange to an outsider, but when anyone knows Mr. Gengnagel they will readily understand. He is a generous, kindly man and does not wish to kill any more birds than will be actually needed to go around, so as to leave a few for the other hunters. They say, by the way, that the hunters are so thick this year that they almost have to cry out or blow a whistle every time they wish to make a shot, for fear of hitting some person in the next field. Something like golf, where, when you feel that you are going to make a smashing drive and a bunch is just ahead of you, you yell "Fore" at the top of your voice, so as to make the players lookout. Otherwise there might be as many fatalities in golf as there is in shooting the festive quail. as many fatalities in golf as there is in shooting the

festive quail.

Mr. Gengnagel was accompanied by Dan Hoover and Stanley Rhodes, of the American Sewer Pipe Company. These trips have come to be annual instiand Stanley Khodes, or the American Sewer Pipe Company. These trips have come to be annual institutions with these gentlemen and they are always planned with a nicety and precision that is truly remarkable. Not anything but what is actually needed is taken along and while it takes them several weeks to recover from one of the trips, they would not forego the pleasure for anything. Not a detail has been overlooked this time and their friends are anxiously awaiting their birds and they will not be disappointed either.

iously awaiting their birds and they will not be disappointed, either.

But getting back to business, Mr. Schaefer said that the past season's business had not been anything to brag about, as Dayton has not done as much building as usual. However, Mr. Schaefer is optimistic over the outlook and predicts that when Dayton starts in again it will do it right. The downtown district of this thriving city, as everyone knows who has ever seen it, is as fine as can be found in cities twice the size. When they build they build well, and all of the big offices, hotels and stores are of the solid, substantial sort, where good material and lots of it is employed.

Schaefer & Gengnagel have large warehouses and

lots of it is employed.

Schaefer & Gengnagel have large warehouses and yards, where they handle a complete line of practically everything in the building material line. They sell Lehigh, Alma and Castalia Portland cements and Ohio and Western Lime Company's lime, as well as the local make. They have a neat little display of brick of all kinds, as well as other materials, in their office.

This firm is at present furnishing 20,000 barrels of Alma Portland cement for the construction of a concrete bridge to be called the Dayton View bridge,



MIXING PLANT AND WAREHOUSE OF DAYTON BUILDERS' SUPPLY COMPANY, DAYTON, O.

which will connect Dayton with one of its suburbs. The initial work has been begun, although the concrete part is not yet started. The contractors are Gephart & Kline, of Dayton, and the architects are the Concrete Steel & Engineering Company of New York. The entire cost of the structure will be

Twenty-three hundred barrels of Alma Portland

Twenty-three hundred barrels of Alma Portland cement will be used in the construction of the Rosenbaum Building, which will be a large warehouse.

Mr. Schaefer says that while it is too early to talk of what will be done next season, there is every reason to believe that some of the large buildings now being discussed will become realities. Among them may be mentioned a new Erie freight depot.

The Star Coal and Cement Company have their office at 125 Wayne Avenue, while their yards and warehouses are across the street north of the canal.

This company is the pioneer in the building supply

This company is the prioneer in the building supply business of this city, being established nearly fifty years ago by C. A. Star. Six years ago Mr. Star sold out his business to W. M. Adelberger and Edward Linxweiler, who now conduct the business under the Linxweiler, who now conduct the business under the old firm name and still use as the trade mark a star. Mr. Adelberger was away on a hunting trip and Mr. Linxweiler had charge of the office. Speaking of business the past year he said that the first six months had not shown up very well, but since August trade had been very good. They have been furnishing the pipe for a large sewer job in the west end of the city and are also furnishing 2,500 barrels of cement for a concrete sewer job.

pipe for a large sewer job in the west end of the city and are also furnishing 2,500 barrels of cement for a concrete sewer job.

They handle Alpha Portland cement and last August added the Superior brand, manufactured by the Superior Portland Cement Company, Charleston, W. Va. Both these brands they find are very satisfactory to their customers. For lime, they handle the Marion lime, manufactured by J. H. Owens, at Owens, O. In plaster they deal in the products of the Grand Rapids Plaster Company, of Grand Rapids, Mich. They carry a various line of fire clay, but find among the higher grades that the Mount Savage brick, manufactured by the Union Mining Company, of Mount Savage, Mo., is the most popular. Sewer pipe and clay tile they buy from the Robinson Clay Manufacturing Company and the Robinson Graves Company. Their yard is excellently situated and their facilities for handling materials are equally as good. W. S. Hawthorn is located at 222 South Williams, Street and on the Pan Handle road, having a switch into his yard for both building materials and coal. Mr. Rice was in charge of the office when the Rook Products man called, and he proved to be a very genial gentleman.

This experim is the agent of the Whitehall Port-

genial gentleman. This concern is genial gentleman.

This concern is the agent of the Whitehall Portland Cement Company, of Philadelphia, Pa., and are very enthusiastic over the merits of this cement. They seem to have considerable confidence in the Whitehall brand, for the way they took up this brand was by ordering a car through seeing the advertisement of it. ordering a car through seeing the advertisement of it. The first proving so satisfactory, resulted in more orders being placed and eventually the securing of the agency. This, of course, was before Harry Rausch commenced to sell Whitehall down this way, but now he is a regular visitor. The yards were piled up with sewer pipe, large and small, and other clay products which are manufactured by the Buckeye Fire Clay Company, of Uhrichsville, O. Like the other dealers, they handle Shop's lime and some hydrate.

The firm of McGreavey & Ortman, 1840 West Third Street, is composed of Neal McGreavey and W. H. Ortman. Mr. Ortman was on the job when the ROCK PRODUCTS man called. He was found in their com-fortable new office, which was built last summer, but could not be interviewed until he had explained with much detail to an old German lady that the seven bushels of coal she bought would cost 24 cents per

bushels of coal she bought would cost 24 cents per bushel. She thought, sure, that as she hauled it in her own wagon it would only be 23 cents.

This firm has been in the supply business for five years and intend to stay. They have had a good trade this year and furnished the cement for a large reinforced packing house this year. The work required 2,500 barrels of cement.

They handle the Medusa brand of cement, manufactured by the Sandusky Portland Coment, Comment

racy nandle the Medusa Brand of cement, manufactured by the Sandusky Portland Cement Company, of Sandusky, O. In plaster they sell Napoleon brand of hard wall plaster and the local lime. Sewer pipe and clay products they buy from the Evans Clay Manufacture.

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unfacturing Company.

A visit to the office of the Dayton Builders' Supply Company, at Washington Street and the Big Four road, found President and General Manager Howard B. Arnold in charge. Mr. Arnold is now the Howard B. Arnold in charge. Mr. Arnold is now the presiding genius of this company, having purchased the interest of his partner, Mr. Lowes, about two weeks ago. Mr. Lowes has gone into the contracting business in this city.

Mr. Arnold is one of the youngest building supply men in the business and has been connected with the Dayton Builders' Supply Company since its or-

ganization two and one-half years ago. In that time he has, by persistence and energy, forged to the front and placed his company among the leading concerns of the city. They handle a full and complete line of builders' supplies and have furnished the materials this year for many of the large buildings

When they organized they put in a line of Saylor's

of the city.

When they organized they put in a line of Saylor's Portland cement, but this year took the agency for the Universal Portland Cement Company, of Pittsburg, Pa. Mr. Arnold says that the trade has taken to the Universal and he has had a great run on it this year. They handle the Shop lime and the Woodville hydrate. In sewer pipe and tile they sell the products of the Robinson Clay Manufacturing Company. They are also the agents for the Sackett Plaster Board of Grand Kapids, Mich.

In connection with the supply business they run a plaster mixing plant and manufacture the Rice Diamond Wall Plaster. The mill has a capacity of twenty-five tons per day.

Among the contracts they are furnishing the materials for are the new reinforced concrete building of the Dayton Paper Novelty Company. Universal cement is being used and the General Fireproofing. The general contractor of this work is A. Bentley & Son. They are furnishing the wall plaster for the new Memorial Building and the plaster for the new Memorial Building and the plaster for the new Memorial Building and the plaster for the new Memorial Building.

One of the large contracts which they have sold

Annual Training School, which is a reinforced concrete building.

One of the large contracts which they have sold Universal cement for is the Mercer County Courthouse at Mercer, Pa. This was sold to a local contractor, who has the contract, and the job will take 8,500 barrels of Universal.

One of their wagens was being loaded when the

8,500 barrels of Universal.

One of their wagons was being loaded when the Rock Products man called and he was agreeably surprised at the condition of both the wagon and the team. The wagon looked spick and span 2nd painted with yellow is bound to attract the attention of people. The team was a handsome pair of bays and looked like "live wires." Speaking of this particular feature, Mr. Arnold said that he found the keeping up of his stock an excellent advertisement. keeping up of his stock an excellent advertisement, as his wagons and teams were recognized wherever they went.

THE REALM OF THE RETAILER.

Plenty of Business Everywhere, But No Profit.

While sitting opposite a large operator of cement and other building materials the other day, he remarked that the volume of their business has been excellent and they paid a dividend in 1908, but it was not the cement clinker that produced the results; it was the old sand pile. This profit was made on a basis of 50 cents per yard, indicating that the equipment of this concern must have been good, but what our friend had to say was more to the point.

It was the sad news that other departments of their business had been far from satisfactory because the retailers in their town had made it their business

their business had been far from satisfactory because the retailers in their town had made it their busi-ness to insist on taking the orders, knowing well enough there was no profit in them, but they wanted the business. All three yards had plenty of orders, but it made no difference; they all sold lime, cement, salt and sand, but when they balanced up their books they found they had not made a cent and they won-dered why.

dered why.

A tow-headed gentleman, very broad across the narrows, remarked: "I can tell you why; because we are D. Fs. We thought because we have been we are D. Fs. We thought because we have been located in this town for some years that no one else had a right to take up our lines. True, we were specialists; had the best lime, finest brand of coment; made good roofing and, more than this, we had our friends, knew we could sell them, but somehow or other they needed more money than usual this year and kept showing us quotations of John Smith & Co., until, by jove, we could not get a nickel out of an order, even by forgetting the fact that we had to put up a fence occasionally to keep the stock out to put up a fence occasionally to keep the stock out of our yard. They raised the telephone charges, and owing to the fires in our district our insurance rate has been increased, and while we were not making any money, we still had to pay 30 cents for butter, and that in the country, too; but we worked along and smiled when we could and ground our teeth the rest of the time.

and smiled when we could and ground our teeth the rest of the time.

"'Don't you know the funny thing about the whole proposition was it all depended on one man. The other two of us were willing to get together. We do not believe in selling a lot of stuff and getting no profit out of it, but the third man on the scene was ambitious and wanted to capture everything in sight; but he got what he was looking for. Plenty of business but no profit. I suppose it is a good thing, and yet when there is even an usual volume of business in our town, when in most cities there is nothing doing. our town, when in most cities there is nothing doing, to have a lean year, perhaps, we will all get sense

enough to exchange trial balances on January 1, and fix up our business so that for every bushel of lime we sell, we will expect a profit and every time we deliver four bags of cement we will know that means at least 10 cents made. When we have done this we will all be satisfied.

"The funny thing about the cold."

we will all be satisfied.

"The funny thing about the whole proposition is there is no bad blood at all; it is simply a case of too much ambition on the part of one of our friends and we all have to suffer with him. This does not sound good, I know, but it is the way I feel, and when you feel for twelve months that every time you sell anything you are giving it away, you begin to talk out loud pretty soon, and this is my talk."

Hydrated Lime in the Country.

Said a prominent retailer the other day: "Now, don't you know, I believe our hydrated lime friends are not studying that problem? We have tried to sell hydrated lime and we are getting it in. The fact is we have sold quite a lot of it this year and believe it can be made better. We have it now in a convenient form, so that if it is necessary that a man buy it for can be made better. We have it now in a convenient form, so that if it is necessary that a man buy it for sanitary purposes or patching a piece of plastering or putting in a foundation for a porch or any old job, you can give him hydrated lime and it is worth the money. We would rather sell the best hydrated lime and get 10 or 15 cents a package more for it than not to have the analysis of the lime right. Now, do not think that I do not believe in hydrated lime. I know it is all right, but we have some canny Scotch plasterers to convince that the old lime mortar is not the only kind, even if they do have to occupy the street while putting up a building with the mortar bed and have a lot of old barrels sitting around. I would much rather have my lime house looking like a flower house than a mussy old lime bin.

"I am going to get out a lot of literature telling the farmers about it and get after every man that is going to build even a pig sty to get him to use hydrated lime. We want the manufacturer to do his part, and then he will have no trouble, for hydrated lime is a good profitable product for the retailer to handle."

During the Good Times.

Every city of importance, and many of the smaller towns, during the good times of the past ten years have taken time by the forelock. When the money was coming in, they built good hotels and the result is the traveler has found it more pleasant to visit these towns and he has advertised the town, because they had a good hotel.

Of course, when you build a splendid new five-story building, in a town of five thousand, of concrete and other materials which are fireproof, it will be a long time before you build another one, but it adds to

and other materials which are preproof, it will be a long time before you build another one, but it adds to the prestige of the town, and every retailer of build-ing material should, through the Commercial Club and personal conversation, insist on their town hav-ing a good hotel. If it is built of cement, brick or reinforced concrete, or cement blocks, it is an adver-tisement for your goods, and as most everybody at least goes by the hotel, and in most of the smaller towns, it is the center of the town gossips (unless the barber shop is more popular), it should be a stand-ing advertisement for the materials handled by the retailer. If you haven't one in your town, pull for it.

The Illinois Annual.

We met the veteran Secretary George W. Hotchkiss, of the Illinois Builders' Supply Association, the other day, and he said: 'We are going to have a very interesting meeting on the 18th of February at the Sherman House. We hope to have some excellent ad-Sherman House. We hope to have some excellent addresses by prominent manufacturers and discussions by retailers from all parts of the State. Inasmuch as this meeting follows the Illinois Retail Lumber Dealers' Association, and gives all an opportunity to visit the great Chicago Cement Show, we should have a large meeting. I think it would be a good point for dealers to bring some of their friends in the contracting and architectural lines along, for they will learn considerable from exhibitions and discussions at these meetings.'' these meetings."

In speaking of Mr. Hotchkies, we are reminded that he very tritely became a prophesier the other day by telling the prognostications of an old friend of his, Mr. Sage, of Bay City, Mich., who in the early sixties practically proved to Mr. Hotchkies that in 1777, the panic Tollowing the Declaration of Independence,

panie following the Declaration of Independence, there has been a panic every ten years since, naming dates so explicitly that all we had to do was to look back in history and we found he was correct.

The good news from Mr. Hotchkiss at this time is that when the year 1908 goes out that 1909 will bloom with that spirit of recovery that will come natural for two years yet, until we get on a normal basis. Therefore, we must more intelligently conduct our business in 1909 and anticipate an increased volume.



WATERBURY INN, WATERBURY, VT., ROOFED WITH AMATITE.



CHASE WOOLEN MILLS, WATERVILLE, N. Y., ROOFED WITH AMATITE.

Ready Roofings.

Within the past few years the demolition of the forests throughout the country has increased the price of lumber to such an extent that two kinds of shingles have been offered to the consumer. The first were too high priced for ordinary use and the cheaper grade was of such poor lumber as to be practically worthless. The use of shingles, therefore, has been decreasing rapidly.

Tin plate might possibly have taken the place of shingles but for the fact that the modern product has not only been high in price but decidedly unsatisfactory in quality.

Slate is by far too costly for most buildings, and is now rarely used except where it is desired for ornamental purposes.

Slag and gravel roofs undoubtedly give satisfaction, but these cannot be used on steep roofs and moreover require skilled labor to lay them.

Ready roofings, then, were introduced to meet a demand for a roofing that was light in weight, low in cost and easy to apply.

The main weakness of most ready roofings is the fact that they have no mineral surface and therefore need constant painting or coating to keep them tight. This coating is generally a special brand sold by the manufacturer of the roofing, and he will make no promises regarding his roofs unless you use this brand of paint regularly. This is not only a nuisance but a lot of hard work. Besides, it is expensive and adds

greatly to the cost of the roofing.

For these reasons a prejudice has been created against the "skin coated" ready roofings and a demand for a first class article—especially for one that would not need painting—has become very pro-

response to this demand for a roofing that needed no painting, and after most extensive and thorough experiments, the Barrett 'Manufacturing Company, the largest manufacturers of roofing materials in the world, offered Amatite to the public a

few years ago. was immediate

Its good points were so apparent that the public realized at once that a vast improvement had been made over the "paint-me-every-two-years-or-leak" roofings.

The sale of Amatite increased without effort on the part of the manufacturers. Just as soon as the practical man grasped the idea that he never had to paint Amatite, thereby saving money, labor and expense, he would have no other kind.

The success of Amatite is due very largely to its wonderful mineral surface.

It is made on a different principle from other roof-gs. Amatite has a rough surface of small particles of hard siliceous rock, such as is seen in quartz or other hard stone when examined under a microscope. This mineral matter is chosen for its weather-resist-ing qualities. It is firmly embedded in the surface of the roofing. On the steepest roof the flow of water will not be strong enough to loosen these particles. It will last for years.

It will last for years.

The mineral surface, however, is not all there is to Amatite. Look closely at the edges of a sample. You will see two layers of felt. It is a long-fibre, wool-stock felt of the best grade, saturated thoroughly with a preparation of coal tar waterproofing. Between each sheet and under the mineral surface on the top is a layer of a specially prepared coal tar

pitch.

Pitch is what scientists call "inert" under the action of weather. Atmospheric changes have no effect upon pitch, and it is equally inactive against acid fumes, vapors, gases, etc. It is the greatest waterproofing material known.

It is used almost universally for waterproofing tunnels, foundations and important underground construction of over cent.

struction of every sort.

That the United States government endorses this That the United States government endorses this form of waterproofing is shown by the fact that it is used in the New York Custom House, one of the largest and most important of the buildings owned by the government, as well as in fortification work and on new buildings which are now being constructed at West Point.

at West Point.

In Amatite this same waterproofing is used. Therefore, when you buy Amatite you are protected from leaks and losses by the best materials in the world—the kind used and recommended by the United States government and the leading engineers and architects everywhere

useful feature of the mineral surface of Amatite is the fact that it is an effective armor against fire. Stone will not burn, and so sparks and hot embers falling on an Amatite roof from a neighboring conflagration will not fire to the roof. For country buildings where effective help in case of fire is remote a roof of good fire retardant qualities such as Amatite is essential.

The use of a fire retardant roofing like Amatite

undoubtedly saves thousands of dollars yearly, and it also give cuts of some plants using their process, to-gether with letters of recommendation. is a mistake to use other roofings which offer little

or no protection.

Anybody can obtain a sample of Amatite roofing by asking for it from the Barrett Manufacturing Company, which has offices in New York, Chicago, Philadelphia, Boston, Pittsburg, Cincinnati, Minneapolis, New Orleans, Kansas City, Cleveland, St. Louis and London, England.

The Bates Valve Bag Company, Cleveland, O., report that they have closed with the Alsen's American Portland Cement Company for their entire requirements, including four machines. This has been accomplished after an exhaustive test of their system. A new concrete warehouse is being constructed by the Alsen Company with a view of using the Bates port-Alsen Company with a view of using the Bates portable packers. This will mean about six or seven machines for this company when this house is completed. They also report the shipment of filling and tying machines to the Edison Portland Cement Company.

The Arthur Koppel Company have turned the agency for the sale of their portable track, industrial railways, cars of all kinds, including mine cars, switches, rails, turntables, etc., in the State of Colorado to the Jeffrey Manufacturing Company, 1711 Tremont Place, Denver, Col.

Ernst Wiener Company, railroad specialists for all industries, announce that J. N. Richards, who for the last fourteen years was general sales manager for the Standard Paint Company, has associated himself with them. Mr. Richards is well known amongst the large manufacturing interests of the country and his many friends and long experience will no doubt be the means of increasing the business of the well-known concern with whom Mr. Richards is now connected. Mr. Richards will make his headquarters for the present at the main office, 50 Church Street, New York

The Brown Hoisting Machinery Company, of Cleveland, O., have issued catalogue "E." This catalogue covers thoroughly the well-known product of this company in this line. "Brownhoist" grab buckets, for handling coal, ore, limestone, etc., are used the world over and are generally recognized as the most efficient grab bucket on the market. The well-known two-rope buckets are pictured in use on many different types of machines. The "Brownhoist" single rope buckets for use on existing machines, having but a single drum engine, are also described and pictured. Automatic dumping tubs, shovel buckets, etc., are also shown. also shown.



DINING HALL, MONROE STATE FAIR, ROOFED WITH AMATITE.



BARN AT PETOSKEY, MICH., ROOFED WITH AMATITE.



The National Lime Manufacturers' Association

Meets Semi-Annually.

W. E. Carson, Riverton, Va... A. Newton, Chicago.... F. M. Palmer, Jr., New York. F. P. Hunkins, St. Louis... C. W. S. Cobb, St. Louis... President
First Vice-President
Second Vice-President
Third Vice-President
Treasurer Official Organ, ROCK PRODUCTS.

ANNUAL MEETING.

Word has been received from President Wm. E. Carson, of the National Lime Manufacturers' Association, that the Annual Convention of that body will in all probability be held in Pittsburg, Pa., on February 17 and 18, 1909. The hotel rates and accommodations, together with the details of the program will be announced in Rock Products for January. rousing big meeting is essential, so make plans to be present on that occasion.

THE BUSINESS OUTLOOK.

W. B. Doyle, of Doyle, S. D., says: "Our business is largely for home consumption and the demand is very light. We anticipate larger operations in 1909 and are figuring on putting in a hydrating process." The Black Hills Lime Company, of Pringle, S. D., says: "We have had a good business and will add one more kiln and a No. 3 crusher."

Thomas A. Wagner, of Myerstown, Pa., says: "I sell most of my lime to farmers and anticipate a fair demand next year."

F. F. Freeman, president of the Rogers White Lime

Germand next year.

F. F. Freeman, president of the Rogers White Lime Company, Rogers, Ark., the jolly representative from the Southwest, writing about business conditions says: "We have had plenty of trade in the West and anticipate 1909 being a good year. With new and up-to-date plants we are able to serve our customers in our well-known way—'quality and service' being our watchword."

our well-known way—'quality and service' being our watchword.''

J. E. Williams, of the White Lime Works, Albright, Mont., says: ''We find it necessary to increase our plant next year, as crushed rock is making quite a hit with our company for concrete work. A big dam is being built at Great Falls, and other construction work being active, we look forward to a large business. We were offered an order for twenty thousand yards of concrete for the Rainbow Falls dam now under construction. Two more dams will be built next year. So that with big improvements by the Amalgamated Company, who, by the way, are going to put up the larges. «mokestack in the world, business looks pretty good. The stack will be 506 feet above the base and 50 feet inside diameter. It is finished except the inside lining. The flues from smelter to stack are nearly a quarter of a mile long. The stack will cost nearly \$500,000. Limestone is unlimited in quantity here and of the best quality.''

John F. Groth, Cedarburg, Wis., says: "We improved our operations materially in 1906 by building an up-to-date plant, which works very satisfactorily, but we are thinking of installing electricity. Our trade is not much at this time, but we think business will be excellent in 1909.''

C. J. Yoder, of West Alisburg, Pa., is quite an exponent of lime for fertilizer, and has gone to the trouble to get out, in good form, facts about lime and the kind of lime used, which is very much to the point. He reports the demand has been greater than the supply for agricultural and building lime, and is well satisfied with conditions.

C. B. Shale, of Williamsport, Pa., reports business very good.

C. B. Shale, of Williamsport, Pa., reports business

very good.

A. J. Zipp, of the Superior Lime Company, Grand Rapids, Mich., will add one kiln in 1909 and reports business never better.

W. Scott Nawgle, of Everett, Pa., says that busi-

ess is good.

The Sandstone Brick and Lime Company, of Seattle, having plants at Granite Falls, says they expect to complete a plant to operate in the spring of

Herbert Harris, of Lime Rock, R. I., reports that he will put in producer gas next year and expects un-usual demand in the spring.

L. V. Unchaper, of Moline, Kan., reports business ood and states that he will install a hydrate plant. good and states that he will install a hydrate plant has just been started and they are using oil for fuel. Mr. Unchaper's main office is at Marion, O., where he formerly operated in the lumber

Pacific Lime and Caster Company, of San Francisco, reports business good.

George F. Erich, of Philadelphia, reports conditions excellent and says they are building two kilns and putting up a building for manufacturing prepared lime.

The Elliston Lime Company, of Elliston, Mont., anticipates a good year's business.

J. S. Pierce, of New Calcium, Pa., says he anticipates a good demand for agricultural lime, but owing to the increased demand for cement, lime has suffered.

The Alden Lime Company, of Lyons, Ia., reports

siness good.

The Brightwater White Lime Company, of Rogers, The Brightwater White Lime Company, of Rogers, Ark., expects to enlarge its capacity by one kiln and possibly two. They think prospects are bright, believing that 1909 trade will be considerably larger than 1908. The product of these kilns is sold by the Southern White Lime Company, of Rogers.

The M. J. Grove Lime Company, of Lime Kiln, Md., reports business prospects unfavorable, due to overbuilding in Baltimore after the fire.

O. F. Perry, general manager of the Rockland-Rockport Lime Company, New York, anticipates a good year in 1909.

good year in 1909.

The American Lime and Stone Company, of Tyrone,

Pa., is rebuilding four kilns and putting up a plaster plant, anticipating a fair business in 1909.

The Templeton Lime Company, Templeton, Wis., look very favorably on 1909 as one of the good years.

They are adding an additional kiln to take care of their huminess.

their business.

H. Larsen, of Rawlins, Wyo., says prospects for business in 1909 compare favorably with several of the years that preceded 1908.

The Crab Orchard Lime Works, Union, S. C., naticipate putting in one or two kilns next spring, with additional capacity of one hundred and fifty barrels each.

each.
The Leicester Marble Lime Company, Leicester Junction, Vt., report that they have had very little business this fall but expect a fair demand in 1909.
Mills Brothers, Springfield, O., think prospects for business in 1909 are good.
M. F. Batdorf, of Annville, Pa., reports business very active and anticipates a good business in 1909.
B. Frank Beard, of Wrightsville, Pa., reports prospects for 1909 good.

pects for 1909 good.

Harry Farnam, of North Adams, Mass., reports business fair now and anticipates a good volume in

The Reading Lime Company, Reading, Pa., report fair prospects for business in their section.

The Pierce City White Lime Company, of Pierce City, Mo., reports that it anticipates installing a hydrate plant in the near future and considers the business outlook good.

The Green Mountain Lime Company of Middle.

The Green Mountain Lime Company, of Middle-bury, Vt., with plant at New Haven, Vt., will soon install a couple of new kilns. They believe that 1909 will be a good year for their business. The Bangs-Gaynor Cement and Plaster Company, of Fayetteville, N. Y., consider the business outlook very fair.

very fair. W. F. Hale, of Graysville, Ga., thinks 1909 should

be a reasonably good year.

The Ladd Lime and Stone Company, of Carters

ville, Ga., takes a somewhat gloomy view of the situation, but we believe after reading what his contemporaries say he will change his views.

The Chickamauga Cement Company, of Chattanooga, Tenn., with plant at Rossville, Ga., take a most optimistic view of the situation in the business world and anticipate no difficulties in 1909.

The Chazy Marble Lime Company, of Chazy, N. Y.,

world and anticipate no difficulties in 1909.

The Chazy Marble Lime Company, of Chazy, N. Y., will soon install one or more kilns, as seem necessary. They think the outlook very fair.

The Moore Lime Company, of Richmond, Va., are not joyful over the prospects for 1909 business. Let us hope they will be agreeably disappointed. Finch, Pruyn & Co., Inc., of Glens Falls, N. Y., and New York City, think the season will probably be better than the one just passed.

The Strunk-Meyer Lime Company, of Cold Springs, O., and Cincinnati, are not anticipating making any new additions to their plant, though they think conditions will be better than they have been of late.

The Crescent Portland Cement Company, of Wampum, Pa., say prospects are not quite what they should be in their part of the country.

The Leesburg Lime Quarry Company, of Leesburg, Va., are putting in a grinder and believe business is going to be very good, indeed.

The Mitchell Lime Company, of Mitchell, Ind., anticipates doing a good business next year. Its Rock Lick plant was entirely reconstructed during 1908

and the Rabbitville operation will probably be given

a new concrete foundation and sheds very soon.

The Gaffney Lime Company, of Gaffney, S. C.,
think the outlook much better than it was this time

F. E. Britton, of Syracuse, N. Y., expects to com-plete arrangements for installing a stone crushing plant in the near future. He considers the 1909 outlook very fair.

Thomas Simpson, of Columbia, Tenn., is very opti-

Thomas Simpson, of Columbia, Tenn., is very optimistic as to the future.

The Brandon Lime and Marble Company, of Leicester Junction, Vt., found that business took a decided upward trend after election.

Gust. Lillyblad, of Red Wing, Minn., has operated for eighteen years, so should be a fair judge of the business outlook. He says, "Good!"

Hart & Page, of Rockford, Ill., consider prospects for 1909 business excellent.

The Port Byron Lime Association, of Port Byron, Ill., say they have found the season of 1908 very poor, but they feel sure of a big improvement in 1909.

The Ste. Genevieve Lime Company, of St. Louis.

The Ste. Genevieve Lime Company, of St. Louis, Mo., are contemplating adding two additional kilns to their plant and look for a general reopening of business—not immediately after New Year, but within the following month or two.

The Rochester Lime Company, of Brighton, N. Y., state that they cannot prophesy with any feeling of certainty but believe business is going to pick up

nicely.

The Eagle Point Lime Works, of Dubuque, In.,

expect a good season.

A. Hurst & Co., of Maquoketa, Ia., with plant at Huntsville, will soon add a hydrating plant to their equipment; they look for fair business, to commence

The Mayville White Lime Works, of Mayville, Wis., are building a new kiln to replace one which they have just discarded. Business with them is very

The Genesee Lime Company, of Honeoye Falls, N. Y., have put in a new hydrating plant this year and are adding more kilns. They state they are enjoying a demand far beyond their capacity. Fine

business!

The T. R. Coughlan Company, of Mankato, Minn., believe the outlook is excellent for business in 1909.

The John Armstrong Lime and Quarry Company, of Alton, Ill., will add new mill machinery and new boiler plant in the immediate future, because they believe these improvements are well warranted by the prospect for 1909 business; they state that they look for a big year.
M. M. Ourdorff, of Oranda, Va., thinks prospects

M. M. Ourdorff, of Oranda, Va., thinks prospects promising for 1909.

The Caledonia Marble Company, of Caledonia, N. Y., reports business prospects good.

W. J. Sparks, of Mount Vernon, Ky., says business is a little uncertain, but he can see some improvement and therefore anticipates better conditions.

The Pittsfield Lime Company, of Pittsfield, Mass., says prospects are bright for 1909; having a new plant and excellent quarry, they anticipate a prosperous year.

perous year.

The White Rock Lime Company, of Natural Bridge,
N. Y., expect a good season in 1909.

The West Stockbridge Lime Company, of West
Stockbridge, New York City, are doubling the capacity of their plant and have been running full
force since July 1. They will only run half the time
during the winter, of course, but think there will be
a heavy trade in the spring.

E. W. Rauscher, of Erin, Tenn., anticipates a good
business for 1909.

business for 1909.

The Valders Lime and Stone Company, of Valders, Wis., will add one kiln, which is under construction at this time. They anticipate a fair demand for 1909.

The Nast Brothers Lime and Stone Company, of Marblehead, Wis., anticipate good business in 1909.

Plant Changes Hands.

Lexington, Va., Dec. 15.—The Rockbridge Lime and Stone Company's works just west of Lexington have been sold to a number of business men of Lexington, who have associated themselves together with the following officers: Benjamin Huger, president; C. E. Harper, secretary and treasurer. The other members of the company are Messrs. Davidson Brothers, M. B. Corse, W. W. Sale and M. D. Campbell

bell.

The officers of the retiring company were Messrs.

E. L. Embree, of Buena Vista, president; C. S.
Adams, of Lynchburg, vice-president; Lawrence Embree, of Lexington, secretary and treasurer.

The enterprise is considered valuable property and

has been in operation some ten or twelve years. The output consists of building and chemical lime, and prepared agricultural lime

The Relation Between Lime and Sugar Industries.

BY CHARLES S. NETZORG.

The lime industry may or may not be aware that in the manufacture of beet sugar in the United States during 1906 to 1907 campaign there were comsumed 250,000 tons of high grade limestone, and at an approximate cost of \$547,500. This consumption involved the operation of sixty-three sugar factories, slicing 4,000,000 tons of beets, from 450,000 acres, producing 470,000 tons of sugar (short tons, 2,000 pounds, in all the above data). This lime consumption was distributed as follows:

	No.	Maximum daily capacity in tons	Total sliced beets campaign	Approximate short tons lime stone con
State.	tories.		'06-'07.	sumption
Colorado	16	12,500	1,487,383	
Michigan		11.550	805,309	
California	8	9,100	671,571	
Utah		4,000	382,769	
Idaho	4	3,750	229,023	
Wisconsin	4	2,300	158,600	9,516
States with o				
Illinois				
Iowa		****	*****	
Kansas			*****	
Minnesota		1.773	*****	
Montana		****	*****	
Nebraska		6,000	368,070	22,084
New York		* * * *	*****	****
Ohio				
Oregon		2.2.5.5	* * * * * *	
Washington		****	*****	
Totals	63	49,200	4,102,725	246,162

It is the ultimate purpose of this article to explain the various operations involving the use of lime, but ill, before so doing, outline some general informa-

The Sugar Beet in Michigan

Sugar beets in Michigan are planted the first of June, harvested the first of October. There are 30,000



PLATE I-CAMPBELL STONE COMPANY QUARRY.

farmers engaged in the industry, involving 100,000 acres of the best land. The sugar factories begin their actual campaign at harvest time, continuing for a period of about 100 days. This period is limited partly by the acreage problem, and partly by the unsatisfactory methods of storing during cold weather, as will be referred to later.

The Lime Quarries.

The limestone used in the sugar business is always high grade, running in most cases 97 to 98 per cent calcium carbonate. Michigan's supply comes from various parts, the greatest sources are the Campbell Stone Company, Afton, Mich.; the Onaway Lime and Stone Company, Onaway, Mich.; Sibley Quarries, Sibley, Mich.; the Hendrick Quarries, on the Soo line,

The Campbell Stone Company, whose quarries are herewith illustrated (Plate No. 1), turn almost their entire output over to the sugar people. The quarries are located at Afton, Mich, in Cheboygan County, on the Hackwood branch of the Michigan Central Railthe Hackwood branch of the Michigan Central Railroad Company. These quarries supply the Michigan Sugar Company, with six factorics, about 20,000 tons for their campaign. The rock is very much disintegrated, due to the high quality and the main point of interest noted in its excavation is the use of Christman deep well drills, 2¼-inch rod, 3-inch bit, drilling through entire thirty-eight feet face. The holes are sprung with dynamite and blasted with powder. The fall in this method, together with the seamy nature of the proposition, breaks the rocks into pieces, averaging from four to twelve inches, and

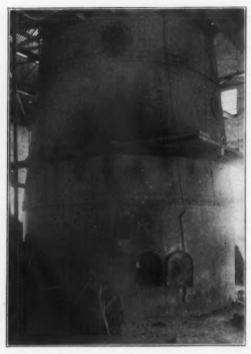


PLATE II-KILN AND HOIST, ST. LOUIS SUGAR CO.

it is delivered to the sugar companies in cars, without crushing. Shipments start about the first of September, in due time for the start of the fall campaign, and continue in several installments until completed. The other quarries differ only in detail from the one just described.

The Lime Kilns.

Several years back, when sugar was made on a small scale, and little lime needed, this latter product small scale, and little lime needed, this latter product was purchased outright on the open market by the sugar people, but modern expansion has declared this impracticable at the present time, and, inasmuch as carbonic acid is required in any event, every sugar company today is equipped with commercial lime plants. The arrangement, of course, varies, but generally consists of ordinary Belgian kilns (see Plate No. 2), with hoists, rotary slakers, mixing tanks for making milk of lime, lime pumps, carbonic acid gas washer and pumps. washer and pumps.

The Process of Liming and Carbonation.

The Process of Liming and Carbonation.

Lime is burned with average 10 per cent coke, slaked and made into milk of lime, specific gravity 30 Beaume. This milk of lime is pumped to the factory and there used in the clarification process—that is, made to combine with the hot, raw, first juice of the beet, known as the diffusion juice, which initially is very dark and highly discolored.

Special apparatus is required for this purpose: A typical illustration is Plate No. 3, made by the Dyer Company, Cleveland, Ohio, from the St. Louis Sugar Company's plant, previous to the liming process. The diffusion juice occupies the large, lower tanks, shown in the lowest part of the plate; the milk of lime occupying the tanks above; the levers controlling the intake of lime are always in the hands of experts. The milk of lime, CaO, is added to the juice in ratios of 5½ to 6 per cent by weight, the exact amount being determined by experience and chemical tests. After the addition of the lime to the juice, the carbonic acid from the lime kilns is forced by pumps into the juice, setting up complete circulation, and at into the juice, setting up complete circulation, and at the same time recombining all the lime, throwing down an insoluble precipitate, which contains a great many



PLATE III-PROCESS OF LIMING AND CARBORA

of the juice impurities. After the carbonation is completed, as indicated by chemical tests, and general appearances, the juice is dropped into large receiving tanks below, where it is pumped through filter presses (Plate No. 4), and shows a clear, light, amber-colored liquid, containing sugar. It is, however, still too alkaline and flows on to a second set of tanks for a second carbonation. The same operation as before is repeated, only on a very small scale, with little time required, compared to the first process. Liming and carbonation are two distinct operations in the purification of sugar juice. Filtering is third. The filtering process (Plate No. 4) primarily consists of a series of plates with frames between, forming chambers. These plates, or frames, are suspended on a pair of side bars by means of a lug projecting therefrom. The plates are covered with a suitable filtering material, usually cloth or paper, and by means of a screw the plates and frames are forced together, forming absolutely tight joints. The

and by means of a screw the plates and frames are forced together, forming absolutely tight joints. The plates are generally thirty inches square, made up in groups of from thirty to fifty, to press for sugar. The juice is filtered by pumping through feed channels, in the stationary head, and when all the chambers are full the liquid is forced through a filtering medium, leaving the filters or solid matter contained in solution in chambers. This process does not materially differ from pressure filtration in other industries.

Steffen's Process.

Steffen's Process.

A few factories in Michigan, viz., the Caro & Croswell branch of the Michigan Sugar Company, the Continental Sugar Company, at Blissfield, employ in addition to the carbonation process what is known as the Steffens process, used in connection with molasses, a by-product in sugar manufacture.

The molasses, a final product, is technically known as a solution of sugar, from which no more sugar can be removed by boiling; that is, the ratio of sugar to non-sugar is so great the purity of same must be raised for a commercial result. The heavy residual molasses from a sugar house is thinned down with water until it contains about 12 per cent of solid mat-



PLATE IV-THE FILTER PRESS ROOM.

ter, and is then run into large machines called coolers, where it is kept in constant agitation, and below 10 degrees centigrade, by cold water circulating through the cooling chambers. If factory water is not cold enough, the required temperature is gotten by ammonia compression.

To the diluted molasses in coolers is added the finely ground lime from the Raymond mill (generally used). The action of lime and dilute sugar solution brought to gether cold and temperature held, forms calcium saccharate, consisting of three parts of lime and one part of sugar. When the combination is complete, the solution is pumped through a filter process, similar to the type above referred to, when the combination of calcium and sugar is retained in the press, and the waste lye is allowed to run to the sewer. To the diluted molasses in coolers is added the

The saccharate, a higher quality, remaining in the press is then diluted and used with milk of lime, in the process of liming first described. The sugar in combination with the lime is freed by heat. The carbonic acid and sugar are free, which were in the residual molasses, and the sugar is ready to be boiled to white sugar, along with the white liquor obtained from the fresh beets.

This concludes the use of lime in the beet sugar

business, and from this point the process is purely a sugar problem, consisting of boiling, evaporation and centrifugal washing, which will not be discussed

Sugar factories are rated in tons of beets sliced; e total rating of all Michigan factories is 11,550

A 600-ton mill—that is, slicing 600 tons per day, which is the average size plant—would use thirty-six tons of limestone, if running full capacity, which approximates 6 per cent by weight, considered good average products.

The sugar industry as it now stands has a fast, natural growth, and government reports for 1906 discuss the subject of drying beets. When the process is completed it will cheapen methods, and generally revolutionize the industry. Dry beets can be more easily stored; would require less room, and would not be subject to injury from freezing or fermentation, which induces chemical changes, inversion of sugar, etc. The length of the beet campaign under such circumstances would be extended. A factory could dry enough beets during the time now devoted to the ordinary campaign to run it during the rest of the year.

is plain to see, then, that such a factory would consume a much larger tonnage annually, and for the same reason there is a feasible outlook for the proportionate increase in the lime consumption. Exproportionate increase in the line consumption. Ex-periments are now being successfully carried out by the Menominee Sugar Company, Menominee, Mich., along this line. At any rate, the industry as it consumes lime today is interesting to the lime folks, and with prospects for a triple increase it becomes an enormous outlet.

Well-Limed Soil Essential for Alfalfa.

Well-Limed Soil Essential for Alfalfa.

The following is taken from Farmers' Bulletin No. 339 on alfalfa, recently issued by the United States Department of Agriculture:

No other forage crop requires so much lime in the soil as does alfalfa. It is apparently necessary that the soil acditity be neutralized by the lime and that there be also an excess for the actual use of the plant. In one test an analysis was made of the mineral constituents of certain crops. The percentage of lime in the alfalfa assh was 34.9, while red clover had but 20.6 per cent, and timothy had only 4.7 per cent. Throughout the East and South alfalfa is most easily produced on the limestone soils. Even these soils often require liming for the best success of the alfalfa, as the rains tend to leach the lime out of the surface layers of the soil.

It may be safely assumed that if a soil ever requires liming it will require it for alfalfa. The litmus test for acdity of the soil may be used, but this is not always satisfactory. The only drawback to this method is that it requires a year's time. It is usually best to apply the lime the season previous to sowing the alfalfa, as this allows time for the lime to become thoroughly incorporated into the soil. There are several different forms of lime on the market. As a general rule it is best to purchase that form which will mean the most actual lime for the money outlay. Ground unburned limestone is proving satisfactory in many sections. Nearly twice as much of this as of the fresh-burned lime is required. Under normal conditions a ton of ordinary lump or ground lime is usually applied to an acre.

Expecting to Get Busy Soon.

Expecting to Get Busy Soon.

The Stearns Lime Company, of Danbury, Conn., writes: "We are pleased to state that we are expecting to get busy soon after January 1. We are building our second kiln now; also have planned to build a crushing and milling plant for crushed stone and for agricultural ground-stone, which will be erected soon. We have much encouragement for all branches and are only too eager to 'get busy.' This 'get busy' is a sort of motto we have adopted for our employees and we urge our customers to do the same.

"Prices are too low. The lime manufacturer deserves more profit for a good article. This practice of buying a barrel of lime at the cheapest price, regardless of its real merit, is all wrong. Contractors should be taught to figure on the basis of what a lime will do for them and not on the basis of how cheap they can purchase three hundred pounds of stuff if there could be some means of establishing a standard for lime (under the pure food and drug act or some other method) it would be of great benefit to the fellow with the good article.

"We understand that hydrating will bring all to a level basis as regards purity, which would, of course, make it a fairer competition. For that reason it is

level basis as regards purity, which would, of course make it a fairer competition. For that reason it is

make it a fairer competition. For that reason it is a desirable accomplishment for any manufacturer who is now using old-fashioned methods.

'We trust that it will be our good fortune to be in the ranks of 'up-to-daters,' helping to bring the lime business to the plane of scientific practices, where it properly belongs.

'We wish you prosperity for the year 1909 and assure you that we appreciate your good work for the building material world and the lime business in particular.'

Making Important Improvement.

CARTERSVILLE, GA., Dec. 10 .- The Ladd Lime Com-CARTERSVILLE, GA., Dec. 10.—The Ladd Lime Company has recently installed a No. 10 Symonds Gyratory stone crusher and they will in the future operate an extensive stone-crushing department in connection with their lime plant. Recently they applied for a charter and have incorporated under the name of the Ladd Lime & Stone Company, capital stock paid in being \$53,000. The incorporators are Henry Harvey, L. B. Harvey, Carl E. Hardey and Wilson M. Hardey. This is one of the oldest established lime manufacturing plants in the south and they have an extensive and valuable deposit of dolomite limestone to take care of their operations for many years to come.

Important Improvements at St. Louis Waterworks.

Visitors to the waterworks reservation at the Chain of Rocks have noticed a peculiar building rising on the bank of the Mississippi, and many are the inquiries that have been made concerning it. The oddlooking structure, not unlike a new-fangled block-house or a group of exaggerated chimneys, is the per-manent home of the water-clarifying system. It is known as the coagulant house, and is now nearing completion.

Although St. Louis has had clear water the coagulant system since prior to the World's Fair, the lime and copperns which are used to precipitate the mud in the river water have been mixed in a little

the lime and copperas which are used to precipitate the mud in the river water have been mixed in a little frame shanty scarcely better than a shed. Believing that the clarifying process, which is a St. Louis idea, in its present adaptation, is a fixture, Water Commissioner Ben C. Adkins has built, at a cost of \$100,000, a permanent home for the coagulation plant. The work of installing the machinery will begin at once, and by April the new plant will be in operation and the old building will be pulled down.

The building is made up of eight immense cylinders, each 20x50 feet inside, and each holding 350 tons of lime, or copperas, and a large mixing tank, separating the big cylinders, four to each end of the building. On top of the whole is a large room, called the "lantern." It is 100 feet long by 20 feet wide, and rises 9 feet above the top of the cylinders, on which it rests. The four walls are practically huge windows, and the room will be used for the machinery necessary to hoist the lime and copperas from freight cars below to the top of the tanks, where it is dumped in. There is also a glass, or open floor in the skypiece, which admits light down into the mixing tank, the real workroom of the building.

Machinery is being installed in the building, now practically completed except a little interior finishing. When completed, the building will be the best arranged and the machinery will be the most perfect that has ever been put together for the purpose. Even a more perfect purification of the St. Louis water supply, at present said to be unequaled under like conditions and volume, will be accomplished with the new machinery, and \$10,000 a year will be clipped from the salary-roll of the coagulant house. Only



THE ST. LOUIS WATERWORKS.

three men, working in three shifts, one at a time, will be required to operate the plant. A janitor is needed to keep the building and machinery clean, 30 that the entire salary-roll will be the wages of four

men.

About \$20,000 will be expended on the machinery, and the building and machinery complete, according to Assistant Water Commissioner Edward E. Wall, will cost about \$100,000. The work of preparing the congulants, which has been done by hand, with the single exception of unloading the lime used, will now be done entirely by machinery. All of the machinery will be electric. The copperas will be taken from cars, delivered at the Chain of Rocks, over the Municipal Railway, by a power shovel. Conveyors will raise the lime and copperas from the cars to the top of the building and automatically dump it into the tanks. At the bottom of the tanks, four at the north end At the bottom of the tanks, four at the north end for lime and four at the south end for copperas, will be a connection with the large square mixing tank. Lime and copperas will be fed into the mixing tank, mixed to consistency which will flow, and this in turn mixed to consistency which will flow, and this in turn will be carried through pipes to other tanks, where a large stream of the mixture joins several huge streams of water. From the tanks, the water, mixed with the clarifying fluid, goes to the settling basins and from there is pumped into the water mains.

The lime required amounts to about fifty tons a day, or 14,000 tons a year. This costs the city about

\$4.50 a ton, or an annual aggregate of about \$63,000. Copperas costs \$10 a ton, but less is used. The amount is 500 tons a month; or about 6,000 tons a year, costing a total of \$60,000.

The masterpiece of the machinery is an electric switchboard, which will cost \$1,000. The board will contain the property of the state of the property of the property of the state of the property of the property

switchboard, which will cost \$1,000. The board will enable one foreman to manage the whole plant, for he can see at a glance what every part of the plant is doing. He can tell by looking at the board how many of his motors are running, how much of the different materials are being delivered to the mixing

different materials are being delivered to the mixing tank, and the quantity of water required in the tanks. The plant was designed and the plans were drawn by A. J. Jacobs. The Cooney Construction Company are the general contractors. Rogers-Shear bars are used in the reinforced concrete work. The bars were shipped to St. Louis in cylinder bent form. The Red Ring brand of Portland cement with Meramie River gravel is used in the concrete work.

Demand for Hydrated Lime Increasing.

San Francisco, Cal., Dec. 10.—The Holmes Lime Company, manufacturers of lime and dealers in building material, say: "We have pleasure in reporting that the business outlook for the ensuing year is highly satisfactory; the volume is increasing. The price of barreled lime is now \$1.50, as against \$1.25 two weeks ago. The demand for hydrated lime is increasing and we expect to run our factory at full blast during this next year. Money is easier and owners are getting out plans for Class "A" and Class "C" buildings. The election is over and we look for "good times.""

The Revival Is On.

CANAAN, CONN., Dec. 16 .- The Connecticut Western Lime Company is behind in its orders and the Connecticut Lime Company is operating all its kilns, and is ten days behind in its output. The White Portland Cement Works, which have been closed since July, have reopened and large quantities of material are being hauled from the quarries in Suffield, Mass.

The Wenatchee Lime Company, of Wenatchee, Wash., has been incorporated, with Fred Keiser, G. H. Wilson and Almeda L. Keiser as incorporators.

The Wawasset Stone Company, of Wilmington, Del., has been incorporated with \$500,000 capital to acquire lime quarries.

The Standard Lime and Stone Company, of Fond du Lac, Wis., is rebuilding their lime plant at Manitowoc, Wis., which has recently been damaged by fire. The quarry of the New England Lime Company, of Brookfield, Conn., which was opened in 1902, has been dismantled.

been dismantled.

Extensive improvements are being made at the quarries of the Mahoning Limestone Company, located

in the vicinity of Hillsville, Pa.

The work of making changes to the crusher and trestle has been called off for several days on account of the bad weather.

The improvements, which will cost several thou-

sand dollars, will result in greatly increased capacity at the quarry when completed.

Building a Concrete Lock and Dam.

MOUNT VERNON, IND., Dec. 14.—A lock and dam is being constructed in the southwest extremity of Hovey's Lake, the largest body of still water in

Southern Indiana.
Civil Engineer E. E. Watts, of Princeton, has charge of the construction. The Vincennes Bridge Company

of the construction. The Vincennes Bridge Company are the contractors.

The concrete walls on both sides of the bayou will be fifty feet long, two feet thick and twenty-three feet high, reinforced with steel bars, while on top of the walls, laid in concrete, will be large steel I beams, on which the floor of the bridge will be built in connection with the lock and dam, making a bridge that will not week away with the first high water. that will not wash away with the first high water.

Will Buil Concrete Sewers.

St. Joseph, Mo., Dec. 12.—It is expected that new specifications will soon be out calling for bids for

specifications will soon be out calling for bids for sewers to be constructed next spring.

Those which have been built have proven satisfactory in every way. They are not only cheaper but better than brick sewers. When the last sewer bonds were voted, the specifications provided for both brick and cement, but nearly all of them were constructed of concrete on account of less cost. An item which means much in sewer construction is the cost of labor. The mixing of concrete can be done by ordinary laborers, but bricklayers for sewer construction will cost about six dollars a day each, making the cost about six dollars a day each, making the difference a considerable one



PLASTER NOVELTIES.

The Art of Casting Plaster Has Developed into Novelties Which are in Great Demand and Opens a New Field.

Religious and classic statuary, busts and reproductions of marble statues cast in plastic materials have developed an industry, the volume of which is known by but few people. They are the people that are engaged in the business or who are closely identified

A ROCK PRODUCTS man investigated this business and will give the methods employed, as well as the results of his observations.

The field for this class of work is without limit. In the past we have had the life work of artists and sculptors in marble, an expensive luxury, which only the very wealthiest could enjoy. The reproduction of the high arts in plastic materials has brought this to the place where those of more moderate means may enjoy this art. When we consider the time and patience required to carve a piece of marble, we can readily see why so few can be made. In plastic materials we have something which can be made very rapidly and hundreds of casts can be made from one mold. Some people might prefer the molded work for the manipulation of materials by the hands seems

for the manipulation of materials by the hands seems to put a touch of life in the object which we fail to find in the cold appearance of a marble statue. At least, judging from the number of objects sold, people prefer it, whether their artistic sense or their pocketbooks has been appealed to or not.

We find references made to the gypsum or plaster models as early as 350 A. D. Julian "the Apostate" had among his household goods a statue of Apollo, but it is thought that this statue was sculptured rather than cast. From this time on until the fourteenth century we find no references made to molding, for the Romans had so debased the art that it was buried and well nigh forgotten. In 1360 a painter named Cennini-Cennino was born, and in receipes which were left by him in a book dated July, 1437, the directions for taking the east "from the face of a man or woman, a person of high rank, such as a lord, a king, a pope or an emperor, you should stir rose water in the plaster, but for other persons it is sufficient to use cold water from fountains, rivers or wells."

persons it is sufficient to use cold water from fountains, rivers or wells."

From that time a development resulted, until we are brought down to the present day, which is more applicable to our methods and materials.

We find that the religious statuary is in great demand, more from the Roman Catholic Church than from any other religious body or sect, and there are concerns who cater exclusively to this trade and confine their business dealings entirely to the church. The reproduction of the busts of old masters, among the most celebrated being Beethoven, Wagner and Mozart, are in much demand by music lovers. Then the writers—Shakespeare and Dickens—have their lovers, as well as the poets, Longfellow, Emerson and Whittier. Then there are those of Napoleon, Washington and Lincoln, the two latter being close to the hearts of Americans, and much sought after. All of these come in the higher classes of casting and alabaster is used as the basic material, with sometimes a mixture of marble dust.

This brings us to what the people are calling for, yea, demanding today and that is novelties in plaster, in which molding plaster is used and the number of tons used in one shop alone is surprising. The American people want to be amused and the funny little Billiken, Joss and Pensive Pup have this year taken them by storm.

Billiken has been on the market about one year

them by storm.

Billiken has been on the market about one year and the Billiken Company tells us that before January 1 they will have distributed among the shops about 200,000. Joss has only been here since October 1, and without any particular effort has been sold 5,000 Billiken can best tell who he is:

I am the god of Happiness I am the god of Happiness,
I simply make you smile;
I prove that life's worth living
And that everything's worth while;
I force the failure to his feet

And make the growler grin;
I am the god of Happiness,
My name is Billiken.

I am the god of Luckiness, Observe my twinkling eye— Success is sure to follow those Who keep me closely by; I make men fat and healthy

Who were quarrelsome and thin; I am the god of Luckiness, My name is Billiken.

The best luck is supposed to come with Billiken and he has been presented to more people, perhaps, within the past year than any other curio.

The latest creation, Joss, is a rather useful ornament, with his two sticks of Chinese punk which is the incense. Joss tells his story in the following lines:

In the Land of the Celestials,
Far off China, I was born,
Where there's not a day that passes,
Rain or shine, but that at morn,
Peasant folks and royal princes
At my shrine their homage pay;
Thankful that such Good I bring them, And such Evil drive away.

Incense burning 'round my altar Incense burning 'round my altar
Brings assurance and success;
Health and wealth and joy are certain;
Children it is sure to bless.
Laugh with me! I'm god of sunshine
Light hearts make life's work all play;
If you'll keep the incense burning,
Devils I will keep away.

Taking these few novelties with the number of others that have been made and sold, will give an idea to what this business is developing.

The description of one firm which makes the bulk The description of one firm which makes the bulk of these novelties will show how these are made. This shop is that of the Florentine Alabaster Company, located at 52 Wabash Avenue, Chicago. The officers of this company are: Charles W. Bickel, president, and Miss Louise Hirtsel, secretary-treasurer. Miss Hirtsel is the manager of the business and it was she who four years ago took up the work of cast-



A PLASTER WINDOW BOX.



SOMATHRACE VICTORY REPRODUCED IN PLASTER BY THE FLORENTINE ALABASTER COMPANY,

ing. From a small beginning she has alone worked up a business that many a man might well be proud of. By businesslike methods and fair dealings, hard work and persistence, she has created a business which has rewarded her efforts by expanding and growing by leaps and bounds. Speaking of the development of the business, Miss Hirtsel says that the past year she has manufactured the novelties almost entirely, though her trade in higher art work has increased very much. When they started they used the Florentine alabaster, which is quarried at Florence, Italy. This material is prepared in France by a calcining and refining process, being powdered for use. It was used for the best quality of reproduced statuary and resembles closely marble and old ivory. Later the alabaster from the Canadian mines was used and now the alabaster is furnished by the mines in this country.

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baster from the Canadian mines was used and now the alabaster is furnished by the mines in this country. However, in the casting of the novelties, the No. 1 molding plaster is now used.

To give some idea of the amount of plaster used for the novelties, she placed her order this week for eight tons of plaster.

In this shop there are about forty people employed, mostly Italians, who seem to take to this class of work more readily than any other nationality. The shop is now turning out about 1,200 pieces per day, a large proportion of which are Billikens.

To be able to make this number per day a force of men are kept busy doing nothing but casting Billikens.

men are kept busy doing nothing but casting Billikens.

Billiken and any other novelty is first modeled in clay, after which a gelatine mold is taken. This mold is made in two pieces and made for five pieces in each casting box. The plaster is prepared and poured into the molds, which are allowed to remain the prescribed length of time, or about ten minutes. The mold is then removed and the cast goes to those who rub off the rough edges and make the model smooth. The cast is then taken to the dry kiln, where it is allowed to harden or bake for forty-eight hours. It is then painted with a specially prepared solution, which, before thoroughly drying, is rubbed off, leaving light tints on the model. It is then ready for the packers, who carefully wrap each in tissue paper and put into paper boxes for delivery.

Another line of cast pieces which are now made only for special orders are umbrella stands and window boxes. The beautiful panels are worked out in the octagonal umbrella stands and make it indeed a very attractive article.

ry attractive article.

Plaques of any design or size are as readily cast as Plaques of any design or size are as readily cast as are the other novelties. A line that will no doubt develop into a profitable business is plaster panels for house decoration. Those which have already been cast have been for special decorations, such as a panel over a piano in the music room of a house. Builders and contractors, as well as architects, will find in this latter an artistic, effective, yet economical decoration for the home. When brought before the people, who want to decorate their homes in an artistic as well as novel manner, there will be a call for plaster panels which will prove a profitable field for the manufacturer. the manufacturer.

Change in Gypsum Concern.

SALT LAKE CITY, UTAH, Dec. 7.—J. W. Taylor & Company, of this city, have secured control of the mines and mill of the National Gypsum Company, near Salina, and will operate them on a larger scale.



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BILLIKEN The-God-of-Things-as-They-Ought-to-Eq Tickle His Toes and See Him Smile



MERCURY, CAST IN PLASTER.

The Tariff on Gypsum.

WASHINGTON, D. C., Nov. 25 .- At the meeting of the Ways and Means Committee, Claude N. Bennett, of the Congressional Information Bureau, Washington, presented a request from the Wm. G. Norcross Co. and presented a request from the Wm. G. Norcross Co. and Berry & Ferguson, of Boston, dealers in building materials, for a reduction of the duty on manufactured gypsum from \$2.25 a ton to \$1.75. He urged that the existing duty has seriously limited the sale of important Canadian plaster in Boston, Philadelphia and Washington, the only three American cities to which it is now sent. Formerly shipments were made all along the coast. Before the existing tariff went into effect the larger part of the plaster which came to the Boston market was brought in from Canada. At the present time, with the exception of a comparatively small amount, plaster made in the United States has been substituted.

Importers of gypsum from Nova Scotia were

States has been substituted.

Importers of gypsum from Nova Scotia were unanimous in asking for free trade, while the manufacturers of the product in this country want the duty increased from 50 cents to \$1 a ton.

Sewell A. Avery, of Chicago, in arguments for increased duty, told the committee that the Nova Scotia product is inferior to that manufactured in the United States. "New York and Virginia gypsum," said Mr. Avery, "makes better wall than the Nova Scotia gypsum, and you can make a comparison of the two Avery, "makes better wall than the Nova Scotia gypsum, and you can make a comparison of the two right here in Washington. The walls of the House office building are made of Nova Scotian gypsum and the walls of the New Union Station are made of American gypsum. The new Union Station is vastly superior in that respect to the office building."

S. A. Walker, of St. Louis, who asked for the double duty on gypsum, said, however, that the trade could get along with the present duty of 50 cents.

Oklahoma Gypsum Deposits.

Charles N. Gould, director of the Oklahoma Geological Survey, in a recent bulletin says:

No state in the Union has a larger supply of gypsum and Portland cement material than has Oklahoma. According to an estimate made a few years ago there are available in the western part of the state 133,000,000,000 tons of gypsum; enough to keep one hundred mills each manufacturing one hundred tons of plaster a day busy for thirty-four thousand years. No estimate has even been made of the amount of material available for the manufacture of Fortland cement in the new state, nor is it probable that such an estimate can ever be made, for the reason that the amount of material is past computa-

tion. More than half the counties in the new state contain ilmestone and clay suitable for the manufacture of Portland cement, and in quantities which are inexhaustible. To cite only a few examples of many that might be mentioned, nearly half of Murray county is covered with a ledge of limestone a mile thick, with clay near at hand in sufficient quantities for millions of barrels of cement.

A ledge of limestone five hundred feet thick extends from Wapanucksa past Atoka, Kiowa and Hartshorne, for over one hundred miles nearly to the Arkanas line, and besides this ledge all the way runs a bed of good clay and a vein of coal. The greater part of Ottawa, Delaware, Adair and Cherokee counties is covered with a limestone ledge three hundred feet thick, underlaid with good clay.

Delaware, Adair and Cheroace countries is certain delaware, adair and cheroace countries in a limestone ledge three hundred feet thick, underlaid with good clay.

In addition to the vast deposits of limestone and clay, Oklahoma has pienty of fuel for their manufacture. According to the government estimate there are approximately 3,000,000,000 tons of coal segregated in the Choctaw and the chockee nations. The oil and gas deposits are said by those in a position to speak with authority to be the largest in the United States. All this coal and natural gas is available for the manufacture of gypsum plaster and Portland cement. With the deposits of gypsum, ilmestone and shale, and fuel sufficient to manufacture it, there is no need to fear that Oklahoma will ever be lacking in building material. The world is passing out of the wood and iron age and into the cement age.

Exterior Plaster Trimmings.

Louisville, Ky., Dec. 18.—An interesting use to which plaster casts are being largely applied in this city is the decoration of moving picture theaters, many of which have sprung up during the last year. Their prosperity is evidenced by the elaborate decorations they have prepared, and practically all have handsome stucco trimmings and plaster figures. Most of this work is stock, however, and is said to be manufactured in Cincipnati factured in Cincinnati.

Another Mill at Akron.

AKEON, N. Y., Dec. 17.—The new mill of the Akron Gypsum Company is now complete and is said to be one of the best equipped plaster mills in the country. It has a capacity of 300 tons per day. The machinery for the plant was furnished by Butterworth & Lowe, of Grand Rapids, Mich. Three 125-horsepower gas engines for the power plant were furnished by the Bessemer Gas Engine Company, of Grove City, Pa.

Warren Herley, superintendent of the American Cement Plaster Company, of Lawrence, Kas., has been succeeded by his brother, R. A. Herley, as superin-

The Portland Cement Company will erect another mill at Pleasanton, Colo. The machinery for the new plant will soon be installed.

A plaster mill is to be erected at Hamlin, Texas, by the Texas Cement Plaster Company. It will have a capacity of two hundred tons per day. This same company also operates a plant at Quanah, Tex.

The Colonial Wall Board and Plaster Company, of Pittsburg, Pa., has been incorporated for \$25,000. Fred Zacker is manager.



JOSS, ONE OF THE POPULAR PLASTER NOVELTIES.

Another Employing Plasterers' Association.

Brooklyn, N. Y., Dec. 10.—International Employing Plasterers' Association No. 2 has been organized by the plastering contractors of Brooklyn. The success of the New York contractors' organization was so great that steps were taken to form the second

association.

At the first meeting twenty-one members were enrolled, and at the next meeting there will be admitted a number of others who have signified their intention of joining the association, but who could not be present at the first meeting. The following officers were elected: President, Peter Fraser, Jr.; vice-president, Theodore Sperling; secretary, J. Monks; financial secretary, E. Gateson; corresponding secretary, T. Wilcox; treasurer, J. Fels; sergeant-at-arms, A Meyer. The meeting place is Coöperative Hall No. 14, Howard Avenue and Madison Street.

President Peter Fraser extends, through Rock

No. 14, Howard Avenue and Madison Street.

President Peter Fraser extends, through Rock
Products, which was made the official organ, a very
cordial invitation to all employing plasterers to attend the meeting and join the association.

At the meeting a committee was appointed to visit
Association No. 1. It was composed of President
Peter Fraser, J. Monks, T. Sperling and E. Gateson.
In writing us of their visit they say: "We were
accorded a very hearty welcome and we found that
No. 1 are with us for they gave us the hand of good
fellowship. We thank Thomas Mannion, his officers
and members for the enthusiastic reception we had. and members for the enthusiastic reception we had. It was a pleasure to see the businesslike way they conducted their business and the results of the work."

Thomas J. Mannion, who was present at the organization of the association, said: "I never saw such an enthusiastic crowd in all my life. The hall was packed by the best people in that particular line of industry in Brooklyn. The men in Brooklyn are hustlers and I believe they are going to have the largest association in the country."

Too Many Mills,

The troubles of the plaster men have been many, The troubles of the plaster men have been many, principally because they couldn't make a penny. The prices have been so low that with the reduction in price of \$1.50 a ton on gypsum the past twelve months have been a regular nightmare to anyone in the game. Most of the operators have been running their mills half or less time and plenty of energy has been spent trying to retain old customers, but alas! it was all a contribution to the cousuming trade, for the misunderstandings of 1907 and the increasing number of new mills have put the business in about the same condition it was in before the consolidation of the large interests some years ago. ness in about the same condition it was in before the consolidation of the large interests some years ago. It is up to the gypsum people to do one of two things—either form a giant corporation or make an association that will bring the operators into closer harmony. Twelve months more of the disastrous conditions of 1908 will mean a loss from which recovery will be along will be slow.

will be slow.

It is certainly a day of adversity with the plaster men, all due to over-supply and lack of intelligent cooperation between operators. For what shall it profit a man if he gets all the trade in Indiana and loses from 25 to 75 cents a ton on every shipment? And that is the prevailing condition from one end of the country to the other. It is true that the field for largest constitution is growing loss all the time for country to the other. It is true that the field for larger operations is growing less all the time for gypsum lands are pretty well absorbed by the corporations now operating, but in the meantime this low-priced period is depressing the whole industry. Some operators may not be losing as much as others, but when you figure the thing down to the point where there was practically only 50 per cent of the gross business of as good a year as 1907 and then see the prices reduced 40 to 50 per cent you can see what has happened to the gypsum business. When finished stuff has been reduced in price to less than \$4 you can see that even 40 per cent makes a big loss but if that is so 80 per cent must be an immense one.

If this reduction in prices continues some people must go out of business, but it is hoped that during the stormy days of January and February the operators in gypsum and plaster will get together. You, gentlemen, may not believe in this, but man's laws are amenable to those made by God, and his admonition is "Self-preservation is the first law of Nature." It would be better to have a ten-round bout with the government than to "bust" every institution in the gypsum business. Not that we are against the government, for far be it from our thoughts, but it it is just as well for the manufacturers to look the matter in the face and try and get that cooperation at Washington that will protect the business interests of this country, for without association in the trade demoralization will continue to exist, due to the way the American is built. His ambition and aggressiveness insures over-production about every so often in every line of trade. If you don't believe it, ask your

neighbor in some other line? With that condition pre-

resignor in some other finer with that condition prevailing, the association is an absolute necessity. Whether there will be a Moses arise in the field and bring the Children of Gypsum out of the mud, we don't know, but it is worth praying for, and therefore we ask you all to join in prayer to that end.

New Incorporations.

The Excelsior Brick and Plaster Company, of Spring Valley, Ohio, has been incorporated for \$50,000 by H. L. Sibley, E. C. Hecox, H. L. and A. L. Richards and Moses Walters.

The Oklahoma City Gypsum Company, at Oklahoma City, Okla., has been incorporated for \$100,000, to manufacture gypsum products. The incorporators are B. F. Burwell, A. E. Briggs and Henry Scales, of Oklahoma City, and F. W. Fowler, of Blue Rapids,

The Cooper & Ferguson Company, of Nashville, Tenn., has been incorporated for \$15,000, to do a contracting plastering business. The incorporators are H. F. Cooper, E. M. Ferguson and P. W. Hozzins.

William Beck, plaster artist with the H. W. Miller Company, New York, who are the plaster contractors for the new Pennsylvania Terminal, has designed a perfectly proportioned model of the Pennsylvania Cement Company's plant located at Bath, Pa. Mr. Beck has also designed the booth for the above company for their display at Cleveland for the coming convention of the National Association of Cement Users. He has recently finished all his work for the



A PLASTER FLOWER BOX.

exhibits of the various New York cement companies, as well as that of the United States Gypsum Company at the permanent exhibition of the Concrete Association in the Brunswick Building, Fifth Avenue, New York. Mr. Beck is considered one of the greatest artists in the manipulation of plastic materials in New York for models and such work.

The U. S. Gypsum Company's New York office has secured the contract to furnish Gypsinite Sackett fireproof partitions and Ivory cement plaster for what is known as No. 77 Hall of the Princeton University. Cram, Goodhue & Ferguson, of Boston, are the architects, and William R. Matthews, of Princeton, N. J., is the general contractor.

The St. Louis Sand and Gravel Company has been The St. Louis Sand and Graver company has con-incorporated at St. Louis, Mo., with a capital stock of \$200,000. The officers of the company are David of \$200,000. of \$200,000. The officers of the company are David A. Marks, president; George Beck, vice-president; Richard C. Mincke, secretary and general manager. The company will install a plant at a cost of \$75,000, with a capacity of 1,000 cubic yards daily.

The Park City Sand and Gravel Company, Vicksburg, Miss., has been incorporated with a capital stock of \$10,000 by G. Hartweg, W. Callihan, George Clifton and others.

The American Molding Sand Company, Columbus, O., has been incorporated by W. B. Kizer, C. S. Rose, H. M. Freek, J. A. Tingle and T. M. George. The capital stock is \$25,000.

The Hollandale brick factory, at Dodgeville, Wis., is rapidly nearing completion. Three kilns have been finished, two or more will be built at once, and three more next spring. The capacity of the plant will be fifty thousand brick a day and forty men will be given employment. The company is capitalized for \$50,000. The superintendent of the factory is H. H. Smith. The output of the factory will consist mostly

Harry de Joannis, the one-time editor of Brick, but now salesman for a prominent clay machinery concern in Canada, is to appear in the role of Santa Claus for the Sunday school of Brantford, Ontario.



The following meetings will be held in the interests of the clay industry:

Canadian Clay Products Manufacturers' Association, at Brandford, Ontario, January 12-13-14. Iowa Brick & Tile Association, at Mason City, January 13-14.

Illinois Clay Manufacturers' Association, at Champaign, Iil., January 19-20-21.

National Brick Manufacturers' Association, at Rochester, N. V., February 1 to 6.

National Clay Machinery Association, at Rochester N. Y., February 1-2.

National Paving Brick Manufacturers' Association, at Rochester, N. Y., February 1-2.

American Ceramic Society, at Rochester, N. Y., February 2-3.

Wisconsin Clay Manufacturers' Association, at Milwaukee, February 10-11-12.

Illinois Clay Manufacturers to Convene at Champaign.

The thirty-first annual meeting of the Illinois Clay Manufacturers' Association will be held at Cham-paign, Ill., January, 19, 20, 21. Although we are unable as yet to announce the complete and official program, we are assured that the officers of the association are doing everything within their power to make this meeting fully up to the high standard

make this meeting fully up to the high standard set in previous years.

The Illinois Clayworkers' Institute, which meets in conjunction with the clay manufacturers, holds its first meeting on Wednesday afternoon, its second on Thursday afternoon and its succeeding meetings on Friday morning and Friday afternoon. All of the institute meetings are to be held at the University, with the exception of the Wednesday afternoon meeting, which will be held in the Elks' Hall.

At both the institute and association meetings important papers will be given. A cordial invitation

portant papers will be given. A cordial invitation is extended to the clayworkers, of Illinois and adjoining States, to attend both the institute and association

Headquarters will be at the Beardsley Hotel, which Headquarters will be at the Beardsley Hotel, which has recently been remodeled and now has sixty additional rooms. Rates are from \$2.25 to \$3.50. Reservations should be made in advance. The meetings will be held in the Elks' Hall, immediately adjoining the Beardsley, and there also will be stationed the Exhibit room, in which it is desired that all members take an active interest. The association desires to make a special feature of this department and requests the hearty cooperation of all clay-product and clay-machinery manufacturers to that end. Many excellent exhibits are already assured. The banquet, on Wednesday evening, will be held at the Beardsley. Space, in the Exhibit room, can be obtained by application to George H. Hartwell, secretary of the association, 303 Dearborn Street, Chicago, Ill.

Canadian Clayworkers.

The Canadian clay products manufacturers will hold their annual meeting at Brantford, Ontario, on January 12, 13, 14. D. O. McKinnon, McKinnon Building, Toronto, is secretary of the association, and will be glad to give full details. All branches of the clayworking industry will be represented at this meeting.

The Central Shale Brick Company, Golden Eagle, Ill., has been incorporated to manufacture clay products. The capital stock is \$60,000.

The Glens Falls Brick Company has closed its plant at Glens Falls, N. Y., after a successful season.

The first annual meeting of the Bickford Fire Brick Company, of Curwensville, Pa., was held in the office at that place last month. J. C. Meyer, of Bellefonte, was elected a director and also solicitor. The company has very encouraging prospects for the fu-ture. It was decided at the meeting to remove the general office of the company to Pittsburg, where it will be located in No. 1122 Farmers' National Bank Building.

ALL THAT THE NAME IMPLIES

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fu-Bank "BETTER THAN OUR SPECIFICATIONS REQUIRE" B. T. FENDALL, City Eng., Baltimore.

"OUR TEST IS QUITE SEVERE. CONGRATULATE YOU ON THE EXCELLENT SHOWING MADE." C. W. HENDRICK, Sewerage Com., Baltimore.



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HIGHEST GRADE of

Every Barrel Absolutely Uniform.

R. R. facilities especially adapted for prompt shipments in the northwest.

Capacity 1,500,000 bbls. Yearly.

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MASON CITY, IOWA.





C. E. Zimmerman, Syracuse, N. Y.

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A new book "Portland Cement Sidewalk Construction" for free distribution—a thorough and comprehensive discussion of the correct methods of laying concrete sidewalks-full of helpful practical suggestions.

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The strongest and most perfect package for shipping and storing cement



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The West Jersey Bag Co. Front and Elm Streets CAMDEN, N. J. Front and Elm Streets

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Where strength and permanency are required there can no mistake in

It has stood the test of time, and will endure for cen-



WAREHOUSES OF M. E. SMITH CO., OMAHA, NEBRASKA. (8,000 Barrels Utica Cement.)

AUDITORIUM HOTEL, CHICAGO, ILLINOIS, (10.000 Barrels Utica Cement,)

FACTORIES OF LIGGETT AND MYERS, ST. LOUIS, MISSOURI. (40,000 Barrels Utica Cement.)

These world famous structures built with Utica Cement exclusively for brick and stone laying mortar. There are thousands of others,

Durability is a quality of building materials that must be considered, and the well-tried excellence of all the masonry work that has employed Utica Hydraulic Cement for the mortar are silent witnesses that bespeak continued patronage for the only goods that is backed by the record of past achievements.

Each of the following reasons contributes an argument why the specifying architect or the careful builder should order Utica Hydraulic Cement exclusively.

Because—It is one of the oldest cements in America, having been on the market since 1838, and has an unbroken successful record of seventy years.

Because—It is strong. Its great binding strength makes a wall built with Utica Cement a homogeneous mass; the motar getting harder with age, finally becomes harder than the brick or stone it cements together.

Because—It is eminently a bricklayers cement. It is plastic, and works cool and easy under the trowel, enabling the workman to spread the mortar uniformly and strike a neat, smooth joint.

Because-It is of a light buff color, and is stainless, it is especially adapted for use with Bedford stone and delicate tinted brick. Where a special color effect is desired, same can be obtained by the use of the ordinary mortar colors without in any way affecting the strength of the cement.

Because—It is durable. Thousands of structures throughout the land stand to-day as monuments to the durability of Utica Cement.

Because—It is fireproof. Hydraulic cement has been known from the earliest times as among the most refractory of substances.

Beaucse—It is economy to use Utica Cement for brick and stone mortar. One barrel of Utica Cement will lay 1000 brick, and in most localities it is as cheap as lime, and cheaper than cement tempered with lime.

Because—We aim by fair and courteous treatment, right prices, and prompt shipments to win the esteem and friendship of our customers. No order too large for us to handle, none too small to receive our closest

Because—You will never have occasion to that you specified Utica Cement, it is the BEST.

To Architects—Always specify Utica Cement for bricklaying mortar because it is the best. Besides it is cheaper than substitutes.

OUR GUARANTEE GOES WITH EVERY BAG AND BARREL.

Utica Hydraulic Cement Company

Utica, Illinois



Tell 'em you saw it in ROCK PRODUCTS.

HYDRATED LIME

Bulletin 27

To Dealers and Contractors:

Hydrated Lime puts your lime business on a profitable basis, while with lump lime you have a very indefinite proposition. Hydrated Lime does not deteriorate with age; it keeps indefinitely; it can be used for any purpose for which lump lime is used, and opens up many other uses which create new business for the dealer. It is the best for disinfectant purposes, while air-slacked lime is worthless. It is the ideal lime for white wash and plaster. As an insecticide it has no equal in making the famous Bordeaux mixture and other sprays for fruit trees and plants generally, and when used in a dry powder form drives away or kills bugs, worms and insects almost immediately. It also makes the famous sheep dip which is so universally used for dipping sheep for scab. It is also extensively used for fertilizing either alone or with other fertilizers.

It may be mixed with Portland Cement for general purposes in proper proportion to make a better concrete, concrete block, or cement mortar for laying brick. It is mixed with Portland Cement in the manufacture of cement blocks and when so used the block is less liable to absorb moisture, which is one of the greatest drawbacks in block manufacture at present.

SNOW DRIFT

Hydrated Lime requires no more slaking, thus saving you at least 25c, per barrel. It enables you to complete a job that for quality and appearance will be unsurpassed and cannot be equaled by using ordinary lump lime.

It does away with the old expensive and crude way of slaking lime and is always ready for immediate use. All that is necessary is an ordinary box for mixing the Hydrate with the water and sand. For plastering or white coat work, this work can be done inside the building. In a mixture of Plaster of Paris, it is gauged up with about half the amount of plaster necessary with lump lime putty, it retards the setting, enabling the plasterer to use the trowel to better advantage. Mix the material inside the building and leave the street open for traffic.

Hydrated Lime is always ready for a patch or hurry up job. It gives the maximum of convenience and economy, and the minimum of annoyance and expense.

Our lime is burned in the latest up-to-date kilns, with gas which we produce ourselves, and have under such perfect control that we do away with the old trouble of over-burning, thus producing a much superior and uniform article than the lime burned the old way.

From the kiln, the lime is carried by a belt conveyor to a large crusher and from there it is carried to a KRITZER CONTINUOUS HYDRATOR, which is a series of drums. The crushed lime passes into the hydrator where a correct amount of water is added, which together with its own steam and heat does the hydrating or slaking, and the result is that after it has traveled through the drums without wasting any of its gases, which is bound to occur while slaking in open air, it comes out at the bottom in a mixture of finely powered Hydrated Lime.

No danger of burning it, like is often done when slaking by hand, thus making the lime work short. The lime being slaked by machinery is bound to make the slaking absolutely accurate and perfect. From the Hydrator it is then conveyed to a large separator which delivers only the very finest particles of lime leaving the tailings and all foreign matter behind, and the separated pure Hydrated Lime is caught in bins where it is then ready for sacking.

Ninety-seven to ninety-nine per cent of the Hydrated Lime will pass through a 100 mesh screen, which means 10,000 openings to the square inch, and nothing but the best burnt and properly hydrated lime can be reduced to such an impalpable powder. Ninety-two per cent will pass a 200 mesh test screen.

In the sacking department, we use a Valve Bagging Machine which does the work, automatically weighing and sacking the Hydrate. The sacks are of the very strongest paper and are sealed at both ends. No strings to come loose and cause waste of material. Each sack of Hydrated Lime weighs exactly 40 lbs. and you get 200 lbs. to a barrel by actual weight, while a barrel of lump lime will not average over 160 lbs. of lime.

The lime being put up in 40 lb. bags makes it a very convenient package for handling and shipping, as well as an economical package for retail purposes. You can sell it to every family for sanitary lime, because it is pure and full strength, and in a convenient package to handle. Every farmer will use it for fertilizer, insect destroyer and sheep dip. Every retail grocer will handle it for these purposes and you can sell it to him with a handsome profit for yourself and still leave him a good profit when he sells it at 40c. a sack. For local shipments we put up 100-lb. cloth bags,

It is absolutely free from danger of fire, therefore does not affect your insurance, while lump lime is dangerous and increases your fire risk and insurance rate.

Remember that Hydrated Lime is no experiment but is used in place of lump lime all over the Northern and Eastern States.

We turn out four tons of perfectly hydrated lime per hour, the capacity of THE KRITZER CONTINUOUS HYDRATOR. This is one ton more than the machinery was guaranteed to do, and we do this day after day, not for an hour or two.

Get busy and up-to-date and give HYDRATED LIME a trial We are ready to answer all questions pertaining to this product

DITTLINGER LIME CO.

NEW BRAUNFELS, TEXAS

We are installing commercially successful hydrating plants

THE KRITZER CO., CHICAGO





Superior Portland Cement

IN YOUR CONCRETE WORK and be assured of satisfactory results

> Ask for a chemical analysis of Superior Cement, and we will show you something which will interest every cement user.

The Superior Portland Cement Co.

General Offices and Sales Department: CHARLESTON, W. VA.

WORKS:

SUPERIOR, Lawrence Co., Ohio on D. T. & I., C. & O., and N. & W. Railways

MAUMEE Waterproofing Compound is

A t your disposal for tests, and

I pon receipt of request, we will send

M ail sample, or larger package by

F xpress. Let us hear from you, as we

Expect a large demand for waterproofing.

The Maumee Chemical Co.

403 St. Clair Building

TOLEDO, OHIO

PERFECTION IN BLOCK MAKING

If you wish to attain this you should combine these three important features:

Wet Process Face Down Damp Curing

The PETTYJOHN INVINCIBLE Machine does this, and is the only machine that does. Tandem Invincible makes two blocks at once. Price \$65.00 and up. Single Invincibles, \$35.00 and up. With our Triple Tier Racking System green blocks can be stacked three high direct from machine with inexpensive home-made rigging. Plans and blue prints free to customers. It economizes space, reduces off-bearing distance and above all insures slow, even, damp and perfect curing and bleaching.

Write for our latest edition of "Stone Making," a book of valuable data, just off the press—FREE

THE PETTYJOHN COMPANY

614 North Sixth Street

Terre Haute, Indiana



NEGLIGENCE IN HOME BUILDING

Responsible for the Horrible Holocausts in which Numbers Perish Annually—None so Blind as Those Who Will Not See.

With a very few oft cited exceptions the homes that With a very few oft cited exceptions the homes that shelter the people of this country are all fire traps. This is beyond any competent contradiction. What though the walls may be built of brick, stone, concrete blocks, adobe, or some other non-burning material, invariably the floors, the partitions and the roof are constructed almost wholly of wood. These are always the portions most exposed to the danger are always the portions most exposed to the danger destruction by fire.

That this statement, unquestionably true, made at this time is partly due to the necessities of the past, the ignorance of the masses with regard to the materials of construction and their uses; and, also, to the resistance of reputed experts in these very matters, who refuse to accept the improvements de-veloped by science and offered freely for their use, who deliberately counsel their clients to build fire traps because such is the shortest path to their fees.

In this we refer to those members of the architec-tural profession who without investigation cry down the introduction of concrete construction whenever and wherever they can. There are, on the other hand, many brilliant architects who have assisted to bring this greatest improvement of all the ages to its pres-ent perfection—such architects richly deserve all the success that their enterprise and initiative are winning

Blot Upon Civilization.

That practically all of the construction carried on in the present year is just as bad as it ever has been in this regard is the one great blot upon our boasted twentieth century civilization—so awful, so wicked and monstrous is it that all other errors shrink to nothing by comparison. That well worn expression of nothing by comparison. That well worn expression of the past still used by the public press, "Fully in-sured," is stretched to cover the responsibility of the owner, the architect, the government, expressed in statute, ordinance, building code or public sentiment consent.

of consent.

What is consumed with fire is lost utterly, it is an irretrievable subtraction from the wealth of the human family that has to be replaced by new effort which could otherwise be used for the creation of more human comforts. Our total fire losses amount almost to the total of new construction as shown by truthful statistics, so the whole building endeavor of the nation with much toil is only striving to keep up that amount of buildings already in use. that amount of buildings already in use.

The Octopus of Insurance.

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Insurance merely divides or parcels out the fire loss so that many little losers can cheerfully indemnify the biggest losers, and in this way soften the blow financially to the individuals, but the actual loss is not diminished by the process to the extent of a single penny—rather, it is increased by the cost of maintaining the insurance institutions. It costs all it is worth, Here again is to be found positive resistance to the general introduction of non-burning concrete worth., Here again is to be found positive resistance to the general introduction of non-burning concrete buildings. Insurance profits he in having the public erect fire traps and then conducting a systematic wagering upon the calculated probability of fire losses with an attendant rake-off. It is a gambling proposition, pure and simple. As they have been generally beneficial to the public, insurance companies are never raided by the rolling nor ruled against by the judges. raided by the police nor ruled against by the judges. Nevertheless, the fire insurance company for a consideration posts odds on the chances of a fire in buildings that can easily burn. Such odds or premiums are based upon identically the same kind of miums are based upon identically the same kind of past records or performances that the racetrack gambler calls his dope sheet. It is nothing but a book betting game, and the same principle in law would apply equally to the insurance game and the racetrack game were it not for the fact that in times past some such fire loss distributing agency was needed—nay, to our shame, it is still needed. Not only is insurance needed in the old built-up sections of cities, the contention of which was finished by generations now struction of which was finished by generations now passed, but the very latest designs of modern homes, but up last year, this year—even now under contract and not completed—are as bad as they ever have been.

Methods of Insurance Opposition.

It is certain that if the insurance game were to be stopped, like betting upon the racetrack has been,

there would at once be a mighty rush for non-burning materials with which to build. Undoubtedly a definite materials with which to build. Undoubtedly a definite part of the profits of the insurance game is syste-matically used to preserve the integrity of the game itself for the distant future as well as the present time, and also by ruling unjustly against those new types of construction which contain little or no fire

An understanding with some of the banks has been secured whereby the bank will not make a loan upon a building to be constructed unless the plans and pecifications have first been passed upon and indorsed by an insurance institution of established standing. On more than one occasion has the owner been forced to change his specifications to "established classifica-tions" after he had first designed his house in such

a manner as to make it next to impossible to burn up. Needless to say the "established" system of construction and the materials required changed the house into what we now term a fire trap. The excuse of the insurance people is, "We have no fire records of this new system using new materials upon which to base our premiums—our business is one of experience only." The bank in such a case disclaims any knowlonly. The bank in such a case discraims any knowledge of building operations, methods or materials—
"we rely entirely upon the expert advice of the insurance company." It will be a long time before the insurance people accumulate any voluminous records

insurance people accumulate any voluminous records of a truthful nature to be made public concerning fire losses of well constructed concrete buildings.

Already they have records and observations in plenty that resembles the hand-writing upon the wall to them. It will not take the bankers half so long to see the "numbers upon their tickets," because the time is at hand when they will miss a great many profitable loans if they continue to bank upon the wrong side of modern science, growing intelligence and the demands of the public for buildings safer from fire losses. Even the money power of the insurance interests becomes a bagatelle in opposition to facts established in the presence of and for the benefit of every individual builder.

The Important Moral Obligation.

The Important Moral Obligation.

But all of this argument so far deals with the financial feature of fire losses. It is a habit, perhaps, with Americans to take up the pocketbook question before anything else. There is more to all of us than mere money in spite of the noise and fuss we make about it. There is a moral side in this matter of safeguarding the home against danger to human life from fire. It is more important than much wealth, and reaches straight to the great paternal heart of man—as God made it, tender and true, sympathetic and resourceful. The human characteristic that makes us nobler than beasts appeals to the inherent goodness that is a part of the living soul to build safe homes, the best that our civilization can provide against the most dread disaster we can partly understand.

One Appalling Example.

A recent holocaust constitutes a lesson in point. We feel confident that the gentleman to be mentioned will pardon the use of his sorrow as an example, and only the earnestness of the writer in his effort to help

the earnestness of the writer in his enort to help others, as much as may be, is a sufficient excuse. Two years ago C. Smith Williams was one of New York's foremost lawyers. There was no more wel-known legal firm than that of Williams & Cristello He has a national reputation as an expert in criminal law. Fortune, popularity, professional success, and above all, an ideally happy home circle were his, consisting of wife and two rosy children. Naturally he measured his reward not so much by the revenues of his lucrative practice as he did by the love and happiness in his home. A noble and useful citizen, loving wife and children, position and wealth with prosperity. How firmly rooted does this seem to be amidst the protections of our higher civilization. Only two years

Today C. Smith Williams is a nervous and physical wreck, fortune and law practice gone—a self-banished exile from the scenes of his former happiness and success—homeless, a widower and childless, too. It is an awful tragedy.

His family was at the country home in the Adiron-dack Mountains alone one night, when the husband and father was detained in the city. The next day when he expected to gather them in his arms, instead of his stately cottage there was only a shapeless mass of cinders. He soon learned that his wife and chil-dren had perished in the flames. His own words are, dren had perished in the flames. His own words are, "That blow was too much for me. I almost lost my mind. I gave up my practice, and ever since I have been going from place to place aimlessly—doing anything in one wild effort to forget. My health would not now permit me to resume my practice, and I drend New York and its memories. I have thrown my fortune away, and have nothing left in the world."

This is one case; who can tell how many similar catastrophies have happened, are taking place today, or where and when the lurid demon may claim his prey. You, gentle reader, why should you imagine a

fire insurance policy of any serious worth, when your dear ones are exposed every day and every night of their lives to a similar death to that just described? Are we really civilized, or are we only consumed with

Safety Without Greater Expense.

There is no longer any need for an American family to take such a risk. It is quite possible, in fact, easy, for any home builder to use materials and methods of construction that render such calamities as here related well nigh impossible, instead of quite probable at any time. Really it costs no more money to build a fire resisting home now than it does to put wooden fire trap,

Whenever any person attempts to contradict this statement by pretending that the cost of the highest concrete construction for the home of an American family exceeds that of a wooden building of the same type, all the reader has to do is to write a letter to the editor of ROCK PRODUCTS, and if we can't convince you any other way we will send a man to put up that house for you. It is more than likely that we are in touch with some contracting engineer not far away who will be glad to get the business.

Our Sacred Mission.

Don't hesitate or feel that you may be intruding, and beyond everything else don't try to figure where we will make any money out of you if you want to ask anything about saving your family from the danger of fire by providing them with a safe home. In the first place, we are in no position to take your money, and secondly, we don't want to do so, for if there is a sacred mission of this journal it is to give the full knowledge of the best building materials and methods freely to every inquirer, and beyond that even methods freely to every inquirer, and beyond that even to as many as we can reach within the limits of our

Responsibility of the Opposition.

The financially interested opponents of the modern concrete improvements for home building for the masses, the predisposed architects, the dilatory and predatory public officials, all who stand in the way of this most beneficent product of applied science and ingenuity, are guilty in part at least of all the human lives that are lost in future fires as well as the less important money consideration involved. So let the

No line of this is written with malice or in dramatic rebuke. We believe that those architects who fail to keep pace with the times are standing in their own light. If they do not soon awake to the truths uttered here they will rapidly pass to the rear. The insurance nere they will rapidly pass to the rear. The insurance interests are straining their efforts against the wind. It were better undoubtedly to come out with a square deal and adjust all that is good in their institution to the new conditions that have arrived. Public officials who have the duty of drawing building ordinances and codes can achieve records of lasting political benefit to themselves, and at the same time win the approval and applause of the people by investig the approval and applause of the people, by investi-gating and approving a new building material and methods of construction, which will amount to fully as great a boon to the human race as personal liberty the free ballot.

The home builder who does not provide at least the safest home that his money will buy is worse than a savage and no better than a beast. Only ignorance upon such a topic can excuse him. We have shown upon such a topic can excuse him. We have shown that it takes no more money, and are prepared to back up the statement.

There Can be But One Result.

The new material that inaugurates safety of life and property from fire is already here in Portland cement concrete. There is no reasonable doubt about the final result; it is now a question only of reaching the greatest number of people with the benefits as quickly as possible.

quickly as possible.

We seldom digress into an irregular article. The excuse is our firm conviction of the need of these words at this time to thousands of people, who will read them. If the lives of one American family can be saved by this bit of advice in home building suggestion, the writer will consider it big pay, and it may well be thousands. If every retailer of supplies, who reads this every cement manufacturer every who reads this, every cement manufacturer, reader, would make it his business to have these arguments or this article reach every intending builder of a home before next spring it could easily mean a million safer homes for American families.

Using the editor's ancient prerogative, we say to each of you, individually, it is clearly your duty, also to your best interest in business, to pass this article on to every home builder possible.

No restrictions are upon this article. We hope it will be repeated by as many as can do so, and we will furnish copies free as long as they last, and print more as they are needed. With your assistance, gentle reader, we want to make the American home safe from fire as soon as may be. Let us know who will do service in this cause.

Largest Concrete Arch Ever Built.

Continued from page 3.

prominent bridge engineers in New York and Phila

prominent bridge engineers in New York and Phila-delphia and passed upon by them as correct. Materials to be used have been investigated, and the factors of safety adopted in accordance with the most conservative engineering practice. The concrete in the central arch is not to be reinforced, as it is used to resist compressive stress only. Concrete for the arch rings and where steel is used for reinforcing is to be proportioned for a mixture of one to six sand and stone, properly graded to fill voids.

It is believed that this should develop a minimum

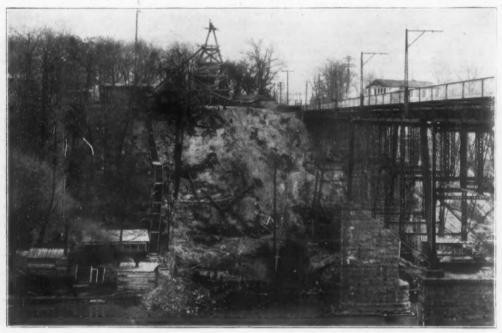
ompressive resistance of 2,000 pounds per square ach on a twelve inch cube thirty days old. In three inch on a twelve inch cube thirty days old. In three months it is computed that the resistance should increase to 2,800 pounds, and in six months it should register 3,800 pounds to the square inch. As the stress is designed for 600 pounds it is believed that the factor of safety will be readily cared for. It is likely, however, that the engineers will require the

so the bearing does not exceed six and one half tons to the square foot. Ample provision is made for the thrust due to the arch, by the weight of the piers themselves and the backing of the shale banks.

To obviate the constant tearing up of the bridge to carry wires and pipes across the ravine to a rapidly

developing residential territory two subways are to be provided. Each will be four by twelve feet in size provided. Each will be four by twelve feet in size and will be for electric and telephone connections and for water and gas. Waterpipe will be laid for future generations, while the various telephone and telegraph companies will install wires on the same basis. This work will all be done while the bridge is under construction and before the floor is laid. A space of many years may then elapse without disturbing the

Schillinger Brothers are looking after the work personally, their resident superintendent being James Elford. The contract for the steel falsework, which is to cost in the neighborhood of \$25,000, has been let to the Interstate Engineering Company, of Bedford, O. It will be delivered early in the new year.



THE SCENE OF OPERATIONS-PUTTING DOWN FOOTINGS FOR THE ROCKY RIVER BRIDGE.

contractor to furnish a concrete of a certain com-pressive resistance in addition to the ordinary speci-fications for cement, sand and stone.

In erecting the main arch the centers are to be loaded so that the distortion due to eccentric stresses will be reduced to a minimum. This feat will be accomplished by depositing blocks of the concrete simultaneously on each side of the crown. This work

will all be covered by special plans.

The engineers in designing the bridge made a preliminary plan so that the central arch was divided into three spans. It was found, however, that the cost was just as great as the one span. By use of the latter damage to the bridge from the ice gorges is entirely eliminated, so its use was decided upon. The design is one of dignity and it is believed that is finished it will be one of the most attractive bridges in existence,

Considerable work was done testing the foundations for the bridge before the contract was let. It was found that it would be quite feasible to rest the great piers on solid shale, which has a high bearing capacity. The bases of the main piers have been designed

Good progress is being made. The setting of concrete began late in November and will be rushed along as rapidly as the weather will permit. Excavations fourteen feet down into the rock were made before footings were set.

Alma Portland cement is to be used on the big job, some twenty-five thousand barrels being required for its completion. Clean sharp river or lake sand, which can stand the various tests to be made according to the specifications will be used. Slag or crushed limestone may be used in the footings and arch returns, while for the main arch clean limestone or other hard stones up to a ton in weight will be permitted.

A. W. Zisiger, park bridge engineer for Cleveland.

A. W. Zisiger, park bridge engineer for Cleveland, who has designed and erected several notable concrete who has designed and erected several notable concrete structures, was invited to prepare a design for the Rocky River bridge. His plan calls for three great spans, one in the center and another at each end. It was believed by the county authorities that the plan devised by Engineers Lea and Felgate presented more factors of safety, and while Zisiger's bridge is more graceful to view it was not accepted on that account.

Accumulating Stock of Structural Tile

Accumulating Stock of Structural Tile
Youngstown, Ohio, Dec. 10.—A. A. Pauly, manager of the Concrete Stone and Sand Company, reports that their structural tile plant is being steadily operated for the purpose of accumulating a stock of concrete structural tile during the winter months, to take care of the early spring business. More than a month ago he notified their selling agents, the Youngstown Ice Company, not to take any more advance orders for tile as at that time it looked as if the oncoming wave of business would keep the plant running behind on its orders not only throughout the entire winter, but during the next summer season. He is making comprehensive arrangements to double the capacity of the plant again, and complete a number of improvements which will increase the output with the present equipment. Mr. Pauly states that he will try to have in storage on the yards at his plant at least a million tile of the various standard sizes most in use within close range deyards at his plant at least a million tile of the various standard sizes most in use within close range delivery of the plant by the time spring opens. As far as taking on business is concerned, Mr. Pauly states that his company is offered all the business that they can reasonably expect to supply in the line of structural tile. Practically every leading contractor in the vicinity are either customers at the present time or are desirous of securing this profitably attractive line of goods.

Recently the company established an architectural and drafting department for the purpose of making plans for houses and structures of every description by the use of their material, and this has been placed at the disposal of contractors and intending builders so that they can compare the specifications in the new material with those that use wooden construction in connection with brick wells or other materials. connection with brick walls or other materials.

connection with brick walls or other materials.

Mr. Pauly states that owing to his interest in the expansion of the concrete industry in general throughout the country he will have an exhibit of his structural tile materials at the Chicago cement show and also at the National Cement Users' convention in Cleveland. He has made many friends in the trade, and will be glad to talk to them of the success that has been achieved at the initial plant where his epoch making inventions have been in operation for over a making inventions have been in operation for over a

As stated in these columns at the time Mr. Pauly first introduced his inventions, his method of making structural tile, both in the walls and floors, roofs and partitions of houses, is the most progressive and at the same time profitable expression of the fundamental cubic yard of concrete to date.

Want Photographs of Concrete Work.

The committee on art and architecture of the National Association of Cement Users request parties who are designing or constructing the following work to send in to Albert Moyer, secretary, Flatiron Building, New York, photographs, colored if possible, with a description of the work, method of construction and if possible the cost. if possible the cost:

Monolithic and reinforced concrete residences. Factories and office buildings. Bridges, walls and fences. Interior decoration. Concrete block construction. Manufactured stone.

Manufactured stone.

These photographs will be classified by the committee, two of the most artistic designs of each class will be selected and used as illustrations in the printed volume of the annual proceedings, several copies of which will be sent, gratis, to the party who executed the work and furnished the photographs. The remainder of the designs and photographs which may have proper artistic value will be illustrated by lantern in the committee's annual report, which will be presented at the Cleveland meeting, January 11 to 16.

Increases Capital Stock.

COLUMBUS, O., Dec. 14.—The Sandford Concrete Manufacturing Machinery Company, of Toledo, has increased its capital stock from \$10,000 to \$60,000.

Concrete Exteriors.

Concrete plaster for use in the place of siding in the exterior of residences is regarded as an econom-ical method of finishing, and the growth of this ma-terial has been encouraged by the scarcity of lumber and the consequent increase in the price of that mate-

It is good practice to apply two coats, the first called the scratch coat composed of five parts of Portland cement, twelve parts of clean coarse sand, and a small quantity of hair. Some builders use a small percentage of lime in the mixture. The second or finishing coat consists of one part of Portland cement and two and one-half parts of clean sand.



DESIGN FOR ROCKY RIVER BRIDGE DESIGNED BY A. W. ZISIGER, PARK BRIDGE ENGINEER FOR



The following conventions of Cement Users will be held. The uses of concrete will be fully discussed by scientific and practical men.

National Association of Cement Users, at Cleveland, Ohio, January 11 to 16.

Iowa Cement Users' Association, at Des Moines, February 2-3-4.

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Nebraska Cement Users' Association, at Lincoln, February 10-11-12.

Chicago Cement Show, at Chicago, February 18 to 24.

Canadian Cement & Concrete Association, at Toronto, March 1 to 6.

Northwestern Cement Products Association, at Minneapolis, March 2 to 5.

National Association of Cement Users.

On January 11-16, 1909, the National Association of Cement Users will meet in its Fifth Annual Convention at Cleveland, Ohio.

Each succeeding convention of this association has excelled all previous ones, and it is quite evident, from the enthusiasm manifested by the members and from the enthusiasm manifested by the members and exhibitors, that the fifth convention will be no exception. It will be seen, from the program, that the papers deal largely with the cost of concrete construction and particularly with matters pertaining to rates of insurance and a suggested building code for concrete and reinforced concrete, which should be matters of prime interest to every user of cement. The data obtained through the reading and discussion of these papers will be invaluable and fully repay the time and expense incident to attending the convention. convention.

The program this year should be particularly in-teresting to users of cement, since it deals largely with the important matter of cost and standard speci-fications and laws relating to the use of cement. Besides, what is of vital interest to all cement users—

insurance rates.

The sale of the available space in the exhibition hall has assured the completeness of this feature, which will cover, as usual, live exhibits, in which the various appliances and machinery for the use of cement will be demonstrated, many of them in opera-

This year, for the first time, exhibits will be classed and grouped, thus affording a far better opportunity of comparing the relative merits of the various types of machinery. All these things indicate conclusively that the fifth convention will be the greatest in the history of the association.

that the fifth convention will be the greatest in the history of the association.

The space on the main floor is entirely taken up; nearly all of that on the gallery is applied for. Firms, desiring to exhibit, should file their applications at once, so that they may be assigned space before all is taken. There is a possibility of additional space being available through the use of other parts of the armory, so that anyone who has no space and desires to exhibit should file application at once. All communications regarding space or any feature should be addressed to the National Association of Cement Users, Harrison Building, Philadelphia, Pa. Passes entitling the holder to full privileges of the convention and exhibition will be issued to members in full standing. Those who have not paid their dues for the current year, or 1909, should do so at once. Cement users who wish to attend the convention and exhibition should avail themselves of the privileges of membership. An application for membership can be obtained from the association or from the editor of this journal. We shall be very glad to assist anyone who desires to join the association.

Tentative Program—Monday, January 11, 1909.

Tentative Program-Monday, January 11, 1909.

- 10:30 o'clock a. m.: Meeting of Executive Board at Hotel Hollenden.
- 12 o'clock, noon: Formal opening of exhibition in Central Armory, Lakeside Avenue and East Sixth Street.
- 7 to 11 o'crock p. m.: Cleveland night. This
 evening is reserved for the special reception
 of the citizens of Cleveland by the officers and members of the association.

Tuesday, January 12.

9 o'clock a. m.: Meeting of section of streets, sidewalks and floors.

5. 10 o'clock a. m.: F Hollenden Hotel. Formal opening of convention,

Address of welcome by the Mayor of Cleveland, Honorable Tom L. Johnson.
 Besponse by the president, Richard L. Humph-

Address by Dr. Howe, president Case School of Applied Science.

Applied Science.

9. Business session.

10. "Cost and Value of Cement Roads." J. H. Chubb, Chicago, Ill.

11. Report of committee on streets, sidewalks and floors, W. W. Schouler, chairman, Newark, N. J., presenting:

(a) "Revision in Standard Specifications for Sidewalks."

(b) "Proposed Standard Specifications for Concrete Roads."

Tuesday, January 12,

Tuesday, January 12.

12. 8 o'clock p. m.: Annual address by the president, Richard L. Humphrey, consulting engineer, Philadelphia.

13. "Cost of Reinforced Concrete Construction as Applied to Buildings," Leonard C. Wason, president Aberthaw Construction Company,

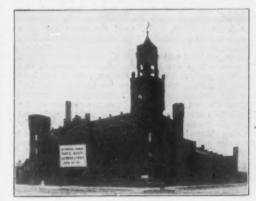
Applied to Buildings," Leonard C. Wason, president Aberthaw Construction Company, Boston, Mass.

14. "Comparative Cost of Reinforced Concrete Buildings," Emile G. Perrot, of Ballinger & Perrot, architects, Philadelphia, Pa.

15. "Cost of Reinforced Concrete Construction as Applied to Bridges," H. H. Quimby, engineer of bridges, Philadelphia, Pa.; E. P. Goodrich, consulting engineer, New York, N. Y.

Wednesday, January 13.

16. 9 o'clock a. m.: Meeting of section on testing cement and cement products.



CLEVELAND ARMORY.

- 17. Meeting of section on insurance, laws and or-
- dnances.

 18. 10 o'clock a. m.: Report of committee on testing cement and cement products, E. S. Larned, chairman, Boston, Mass.

 19. Report of committee on cement products and machinery, A. T. Bradley, chairman, Rochester, N. Y.

 20. Business session.
- - Business session:
 - (a) Report of executive committee.
 (b) Report of committee on publicity.
 (c) Report of committee on contributing members.
 (d) Place of next convention.
- (d) Place of next convention.
 (e) Election of officers.
 21. 8 o'clock p. m.: Report of committee on art and architecture, Charles D. Watson, chairman, Pittsburg, Pa.
 22. "Decorative Concrete Stone," F. A. Norris, Boston, Mass.
 23. "Reinforced Concrete Residences," B. A. Howes, Jr., New York, N. Y.
 24. "Small Concrete Houses; Manufacture and Cost," R. C. Knapp, Philadelphia, Pa.
 25. "Monolithic Concrete Wall Buildings; Methods, Construction and Cost," Col. Robert H. Aiken, Chieago, Ill.
 26. "Methods and Cost of Surface Finishes for

- 26. "Methods and Cost of Surface Finishes for Concrete."

- Thursday, January 14.
 27. 9 o'clock a. m.: Meeting of section on rein-
- forced concrete.
 28. 10 o'clock a. m.: "Advantages of Reinforced Concrete for Railroad Construction," B. H. Davis, assistant engineer, D. L. & W. R. R., Hoboken, N. J. 29. "Cold Storage Warehouses of Reinforced Con-
- crete Construction," J. P. H. Perry, Turner Construction Company, New York, N. Y.

- "Cost of Concrete Subways."
- "Value and Cost of Reinforced Concrete for Retaining Walls," A. Lindau, Corrugated Bar Company, St. Louis, Mo. 8 o'clock p. m.: Reserved for social entertain-
- ment, etc.

Friday, January 15.

- 9 o'clock a. m.: Meeting of section on cement products and machinery.
- products and machinery.

 10 o'clock a. m.: Report of committee on insurance, laws and ordinances, W. H. Ham, chairman, New York, N. Y.

 "Methods of Attaching Shafting and Machinery in Reinforced Concrete Buildings," Wm. M. Bailey, chief engineer Eastern Concrete Construction Company, Boston, Mass.

 "Value and Cost of Cement Inspection."

 "Cost of Concrete Telegraph Poles."

 "Cost of Waterproofing."

 "Cost of Concrete Poles."

 "O'clock p. m.: "Value and Cost of Steam Curing of Concrete Blocks," F. S. Phipps, manager Central Stone Co., St. Joseph, Mo.

 "Use and Cost of Cement Tile for Fireproofing Purposes."

- Purposes."
 "The Present and Future of the Cement Block;
 Its Cost, Manufacture and Availability," J.
 A. Smith, Ideal Concrete Machinery Company,
 South Bend, Ind.

Saturday, January 16.

43. 11 o'clock p. m.: Closing of exhibition at Central Armory.

PARTIAL LIST OF EXHIBITORS.

43. 11 o'clock p. m.: Closing of exhibition at Central Armory.

PARTIAL LIST OF EXHIBITORS.

American Cement Co., Philadelphia, Pa.
American Steel & Wire Co., Cheazgo, Ill.
Anchor Coucrete Stone Co., Benver, Colo.
American Steel & Wire Co., Cheazgo, Ill.
Anchor Coucrete Stone Co., Rock Rapids, Iowa.
Ashland Steel Range & Manufacturing Co., Ashland, Ohio.
Association of Am. Port. Cement Mfra, Philadelphia, Pa.
Atlas Portland Cement Co., New York, N. Y.
Auer & Son, Louis, Milwauke, Wis.
Barrett Minufacturing Co., Canton, Ohio.
Besser Manufacturing Co., Canton, Ohio.
Besser Manufacturing Co., Canton, Ohio.
Besser Manufacturing Co., Alpena, Mich.
Blaw Collapsible Steel Centering Co., Pittsburg, Pa.
Brown Holsting & Co., Creston, Ohio.
Burness, F. B., Kansas City, Mo.
Cement Age, New York, N. Y.
Cement Era. Chicago, Ill.
Cement Machinery Co., Jackson, Mich.
Cement Tile Machinery Co., Waterloo, Iowa.
Centurn Cement Machinery Co., Rochester, N. Y.
Chain Belt Co., Milwaukee, Wis.
Chair Belt Co., Milwaukee, Wis.
Concrete Foundry & Manufacturing Co., Cloumbus, Ohio.
Clover Leaf Machine Co., South Bend, Ind.
Concrete Stone & Sand Company, Youngstown, Ohio.
Corrugated Bar Co., St.
De Armon-McKinney Manufacturing Co., Piqua, Ohio.
Dietrichs Clamp Co., Little Ferry, N. J.
Edison Portland Cement Co., New York, N. Y.
Edmondson Concrete Machinery Co., South Bend, Ind.
Eureka Machine Co., Lansing, Mich.
Foote Foundry Co., The J. B., Fredericktown, Ohio.
Garden City Sand Co., Chicago, Ill.
Gauntt Manufacturing Co., F. G., Fort Wayne, Ind.
Hall-Holmes Manufacturing Co., South Bend, Ind.
Hall-Holmes Manufacturing Co., South Bend, Ind.
Hillinois Gravel Company, Princeton, Ill.
Indiana Concrete Form Co., Indianapolis, Ind.
Jackson Co., The F. M., Akton, N. Y.
Kent Machine Co., Chicago, Ill.
Gauntt Manufacturing Co., Fo., Fort Wayne, Ind.
Hillinois Gravel Company, Princeton, Ill.
Indiana Concrete Form Co., Indianapolis, Ind.
Jackson Co., The F. M., Akton, N. Y.
Lehigh Portland Cement Co., Milman, Mich.
Michaelphia, Minn.
Monolith Stee

The Modern Paving Company, of New York, has been incorporated to do a paving, building material and contracting business. The incorporators are William A. Cooper, F. A. Spencer and John A. Palmer. The capital stock is \$5,000.

Iowa Association of Cement Users.

The fifth annual convention of the Iowa Association of Cement Users will be held at Des Moines, Iowa, February 2, 3 and 4, 1909.

No emphasis need be placed on the fact that Des Moines is the best convention city in Iowa. It is centrally located and easily accessible from all directions by steam railway and interurban lines. The Commercial Club of the city extend their usual and wall-known beautiquity and are making slaboured plane. well-known hospitality and are making elaborate plans for the pleasure and substantial entertainment of all attending members of the association. The hotel facilities are ample and in point of service and elegance, unsurpassed.

unsurpassed.

There are many things of interest to cement people in and about the capital city in the way of concrete structures, buildings, the new Locust Street bridge and the mammoth new cement manufacturing plant of the Iowa Portland Cement Company, near Valley Junction.

The meetings of the convention and headquarters for verification of will be in the Savery Head.

for registration, etc., will be in the Savery Hotel, corner of Locust and Fourth Streets. There are a number of other first-class hotels in the city where accommodations may be obtained at rates to suit any and every possible requirement, all of which are lo-cated within a few blocks of the Union Railway and

cated within a few discrete of the Control of the Control of the Interurban stations.

The secretary's office and information bureau in the Savery Hotel will be open for the enrolment and accommodation of members Tuesday morning, February 2. The first session will convene Tuesday afternoon, the control of 2. The first session will convene fuesday afternoon, followed by meetings in the evening, Wednesday morning and afternoon and Thursday forenoon. It is the tentative plan to devote the afternoon of the last day of the convention to trips about the city and to the new Portland cement mill, while Wednesday evening entertainment will be provided by the Commercial Club. The best talent obtainable will take part in the program, and many of the subjects presented will be illustrated by means of the stereopticon. Members are invited to submit subjects for papers and discussions.

papers and discussions.

The exhibits of cements, cement products and cement using equipment will be placed in the Cruzan Building, on Court Avenue between Second and Third Streets. The first two floors of this building are to be used and afford about ten thousand square feet of available space. Heavy machinery and such as is to be shown in operation will be placed on the first, while the lighter exhibits will be assigned space on the second floor. The building is strongly supported to bear heavy loads, lighted and heated and supplied with electricity. There is a large ten by ten-foot to bear heavy loads, lighted and heated and supplied with electricity. There is a large ten by ten-foot side and end door for unloading at the level of the lower floor, and an electric elevator operates for transporting to the upper level. Reference to the accompanying floor plans will show the details of arSpace will be assigned in order of the receipt of applications. Applicants should specify from the floor plan the numbers of the spaces desired, stating also by number, second and third choice or location.

The charge for space is uniformly 10 depts not

also by number, second and third choice or location.

The charge for space is uniformly 10 cents per square foot, according to reservation made. Reservations of space unoccupied or not paid for by Monday night, February 1, will be subject to cancellation and reassignment. The exhibition hall will be available for the installation of exhibits Monday, February 1, and all exhibits must be removed by Saturday, February 6. All displays should be arranged and in place by noon of February 2, when the hall will be

place by noon of rebruary 2, when the half will be first opened to visitors.

Exhibits should be addressed, in shipping, in care of Exhibition Hall, Cruzan Building, Des Moines. Blank applications for space may be obtained from the secretary, Ira A. Williams, Ames, Iowa, to whom remittances and requests for information should be addressed.

There is every reason to expect a larger attend-There is every reason to expect a larger attendance at this winter's meeting than at the last. An effort is being made to bring into the association every cement user in Iowa. Membership, however, is not limited to residents of the State, but anyone interested may join the association. Every member should tell his friends of the convention and its work and invite them to join. The membership fee is low and the benefits great. Members may remit to the secretary their fee of one dollar for the coming year, and ask other cement users to do so, in order to save bother and annovance at convention time. Send in bother and annoyance at convention time. Send in the addresses of those to whom announcements should be mailed.

Communications relating to the convention, requests for information and remittances should be sent to Ira A. Williams, secretary, Iowa State College, Ames,

Nebraska Cement Users Up and Doing.

The members of the executive board of the Nebraska Cement Users, in a called meeting, December 8, at Lincoln, Neb., fixed the dates for their fourth annual convention for February 10, 11 and 12,

More exhibits and an unusual turnout is expected. These meetings are gaining rapidly in strength and numbers yearly. Therefore the Auditorium has been named for the exhibit hall and the Lindell Hotel hall for the meeting place, both located at the corner of Thirteenth and M Streets. It is the purpose of the board to make this gathering the banner gathering over all previous efforts. Nebraska is noted for "doing things." Exhibitors and others are requested to write Secretary I. E. Watenpaugh at Western, Neb., until after February 1, when he will transfer his headquarters to the Lindell Hotel at Lincoln until after the show is over. after the show is over.

L. E. Porter, the president of the association, will be at York, Neb., his home, until within a few weeks of the convention, when he will also transfer his headquarters to Lincoln.

This show was one of the surprises of last season, as the attendance was not only large but the interest was keen. Nearly every exhibitor that was on hand, last year, will be on hand this time, as they would not miss it for anything.

The Chicago Cement Show.

At the annual meeting of the stockholders of the Cement Products Exhibition Company on November 18 in the Commercial Bank Building, Chicago, the following officers were elected for the ensuing year: President, Edward M. Hagar; vice-president, Norman D. Fraser; secretary-treasurer, J. U. C. McDaniel.

Executive committee: B. F. Affleck, chairman; William Dickinson, J. U. C. McDaniel.

Directors: Edward M. Hagar, president Universal Portland Cement Company; Norman D. Fraser, president Chicago Portland Cement Company; A. St. dent Chicago Portland Cement Company; A. St. John Newberry, president Sandusky Portland Cement Company; William Dickinson, sales manager Marquette Cement Manufacturing Company; D. McCool, president Newaygo Portland Cement Company; E. W. Shirk, president United States Cement Company; B. F. Affleck, general sales agent Universal Portland Cement Company; J. U. C. McDaniel, sales manager Chicago Portland Cement Company; C. A. Whyland, president Elk Cement and Lime Company.

Arrangements for the Second Annual Cement Show in Chicago are rapidly nearing completion. The date is February 18-24, and the place is the big Coliseum, where the recent Republican National Convention was

The management of the cement show have inaugurated an entirely new scheme, so far as cement exhibitions are concerned, for the decorations and arrangement of the exhibits.

rangement of the exhibits.

The general idea at the Chicago show will be to preserve a uniform and harmonious system in the installation of exhibits. All the booths, including uniform partitions, railings, floor coverings, signs and other minor effects will be put in at the expense of the management before the exhibitors move into the building with their displays. There was some question at first as to whether this plan would prove successful. It is apparent, however, that the majority of those interested in making displays of their products approve of the plan, as practically all of the products approve of the plan, as practically all of the space at the show has been contracted for under the proposed arrangements. It is believed that the general effect of a show of this kind will prove much more attractive to the visitors and much more satis-

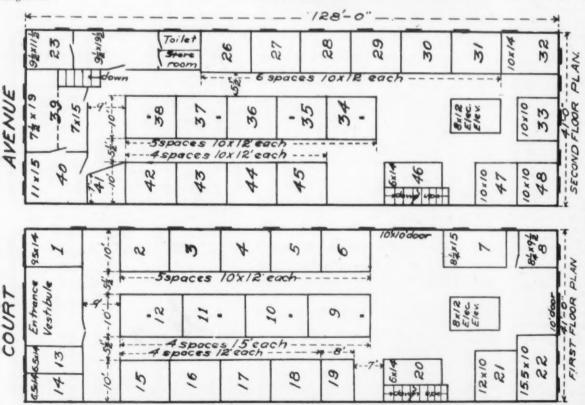
iactory on the whole to all of the exhibitors. The annoyor the exhibitors. The annoyance, confusion and great expense incidental to the installation of a booth by each individual exhibitor is well known, and is entirely obviated by this scheme. The success of cement exhibitions depends, to a very great extent, upon the paid admissions, and it is quite essen-tial for all trade shows to present a symmetrical and attractive plan the display of the various products.

The reduction in rates made by the Central Passenger Association promises to bring a large attend-ance from the territory covered by the lines composing it.

Cement men who contemplate making the trip to Chicago from points in Illinois, Indiana, Michipoints in Illinois, Indiana, Michigan, Ohio, western Pennsylvania, western New York and southern Ontario should not fail to secure the benefit of the reduced rates. A rate of a fare and one-half for the round trip can be obtained by asking the local agent.

Parties from the eastern half of Canada can secure the benefit of a similar rate over roads comprising the Eastern Canadian Passenger Association.

The conventions of the Illinois Lumber Dealers' Association and the Illinois Masons' Supply Asso-ciation are scheduled for Febru-ary 17, 18 and 19. These associa-tions will bring to Chicago several hundred individuals actively inter-ested in the cement show. ested in the cement show



FLOOR PLAN OF EXHIBITION HALL, IOWA CEMENT USERS, DES MOINES, IA.

About four-fifths of the main floor space has al-About four-fifths of the main floor space has already been contracted for, and in order to accommodate the large number of companies desiring to exhibit, arrangements have been made for exhibits in the balcony. It is believed that there will be at least 250 exhibitors at the opening of the show in February. Below is a partial list of those who have already contracted for space:

Advance Mixer Co., Jackson, Mich.
Alken Cement House Co., Winthrop Harbor, III.
Alken Cement House Co., Winthrop Harbor, III.
Alken Cement House Co., Winthrop Harbor, III.
American Contractor Publishing Co., Chicago, III.
American Steel & Wire Co., Chicago, III.
Anchor Concrete Stone Co., Chicago, III.
Anchor Concrete Stone Co., Chicago, III.
Arrowsmith Concrete Tool Co., Arrowsmith, III.
Arrowsmith Concrete Tool Co., Arrowsmith, III.
Ariso White Sand Co., Millington, III.
E. A. Benniaphofen, Hamilton, Ohlo.
Besser Manufacturing Co., Aipena, Mich.
Ballou's White Sand Co., Millington, III.
E. A. Benniaphofen, Hamilton, Ohlo.
Cement Age, New York, N. Y.
Cement Era, Chicago, III.
Centrifugal Concrete Machine Co., Chicago, III.
Centrifugal Concrete Machine Co., Chicago, III.
Chicago Architectural Photographing Co., Chicago, III.
Chicago Concrete Machinery Co., Chicago, III.
Chicago Concrete Machinery Co., Chicago, III.
Chicago Concrete Machinery Co., Chicago, III.
Cleveland-Akron Bag Co., Cleveland, Ohlo.
Climax Co., Chicago, III.
Concrete Age, Atlanta, Ga.
Concrete Publishing Co., Detroit, Mich.
Concrete Publishing Co., Detroit, Mich.
Concrete Publishing Co., Detroit, Mich.
Concrete Publishing Co., Chicago, III.
Concrete Sapply Co., Chicago, III.
Devarmon-McKinney Manufacturing Co., Piqua, Ohlo.
Construction News, Chicago, III.
Devarmon-McKinney Manufacturing Co., Piqua, Ohlo.
Construction News, Chicago, III.
Beater Bros. Co., Boston, Mass.

Jodge Manufacturing Co., Chicago, III.
George W. deSmet, Chicago, III.
Georg

Alling Construction Co., Chicago, Ill.
Chicago Portland Cement Co., Chicago, Ill.
Rock Products, Chicago, Ill.
Tarentum Paper Mills. Chicago, Ill.
National Wire Cloth Co., Sandusky, Ohio,
Sanford Concrete Machinery Co., Toledo, Ohio.
Inman Concrete Building Block & Mach. Co., Beloit, Wis.
Wood Electric & Manufacturing Co., South Bend, Ind.
Toledo Wheelbarrow Co., Toledo, Ohio.
Mercantile Bridge & Concrete Tile Co., Parls, Ill.
Ballou Manufacturing Co., Belding, Mich.
Standard Scale & Supply Co., Chicago, Ill.
Municipal Engineering & Contracting Co., Chicago, Ill.
McKelvey Machinery Co., Chicago, Ill.
McKelvey Machinery Co., Chicago, Ill.
McKelvey Machinery Co., Chicago, Ill.
Ohio Ceramic Engineering Co., Cleveland, Ohio.
Coltrin-Boos Manufacturing Co., Jackson, Mich.
Clover Leaf Machine Co., South Bend, Ind.
Raymond Concrete Pile Co., Chicago, Ill.
George C. Marsh, Chicago, Ill.

Northwestern Cement Products Association.

Northwestern Cement Products Association.

It has been determined by the Executive Committee that the fifth annual convention of the Northwestern Cement Producers' Association sahll be held in the city of Minneapolis on March 2, 3, 4, 1909.

The date was purposely set in March, as it was unanimously agreed that concrete workers would be then preparing for the opening of the season's business, and consequently more interested in knowing what strides had been made in concrete, and concrete products during the past year.

The Commercial Club of Minneapolis has given, gratis, the use of the immense New Armory. The armory contains a great drill floor, which will be ideal for exhibition purposes, and also a separate hall which is well suited for the holding of meetings.

The executive committee is making extraordinary efforts to make the next convention the biggest ever held in the Northwest. The program, transportation, exhibit and publicity committees are hard at work, and you can rest assured that each and every one of the convention. them will perfect their work before the date set for the convention.

The Commercial Club of St. Paul authorized the

appropriation of a sufficient sum to purchase a large buck-handled sterling silver cup to be donated to the exhibitors

exhibitors.

The Builders' Exchange of St. Paul followed quickly with the donation of another cup for the same purpose. The Builders' Exchange of Minneapolis, not to be outdone, donated still another one, and the Manufacturers' Association of Minneapolis, feeling that they wanted to be represented at the big cement show, showed their appreciation of concrete by donating another beautiful cup.

Every club donating cups has appointed a special committee to act in conjunction with the executive

Every club donating cups has appointed a special committee to act in conjunction with the executive committee of the Northwestern Cement Products' Association in deciding the winners of the loving cups. On the last day of the convention, in the afternoon, award of prizes will be made.

Inquiries from prospective exhibitors are coming in rapidly. Members throughout the entire Northwest are sending in new applications for membership. There is no question but every foot of space will

west are sending in new applications for memoeranjp. There is no question but every foot of space will be taken by exhibitors on the immense drill floor of the Armory before the doors are opened on March 2. The general public of the Northwest are interested in concrete, in concrete products, and they have prom-

ised to turn out to see the coming show in greater numbers than ever before.

Martin T. Roche, president; J. C. Van Doorn, sec-retary, will be only too pleased to give any informa-tion desired by prospective exhibitors or those wishing

to attend the convention.

Reduced rates have been secured on all railroads

Reduced rates have been secured on all railroads entering Minneapolis.

It is regarded as extremely appropriate that the coming cement convention in March is to be held in the State Armory, as this building itself is of reinforced concrete construction throughout with the exception of the exterior, which is of concrete brick, and the immense steel arches supporting the roof over the drill hall.

The building itself occupies a ground space of 40,000 square feet, and is regarded as a most satisfactory example of modern concrete construction.

The Canadian Cement and Concrete Show.

It has been decided by the Canadian Cement and Concrete Association to hold its first convention and exhibition at the St. Lawrence Arena, Toronto, March

1 to 6, 1909.

The exhibition will include not only products from the different manufacturers of cement, but also from the manufacturers of machinery, appliances and kindred articles.

The convention proposes to bring from the United States and elsewhere a number of very prominent business and scientific men identified with the cement

industry to address the convention.

Being the first show of its kind ever held in Canada, it will be supported and encouraged, not only by the people interested in the business, but by the general public as well.

They are also arranging with the railroads to give

a reduced rate to Toronto that week, and invitations will also be sent to the different municipal officials throughout Canada. The building will be available for installation of exhibits at least four days before the opening of the show.

Meeting of the American Society of Mechanical Engineers at Philadelphia.

The next monthly meeting of the American Society of Mechanical Engineers will be held in the Engineering Society's Building on Tuesday evening, January 12. The paper will be by Carl G. Barth, of Philadelphia, upon "The Transmission of Power by Leather Belting," illustrated by lantern slides. It will be a comprehensive summing up of the theory and practice of belting, in which conclusions are drawn from the work of Lewis, Bancroft, Bird and others, who have made experiments upon the transmission of power by belting. Valuable charts have been pre-pared by the author for the solution of belting problen

Mr. Barth's long experience in the scientific running of machine tools, in connection with the intro-duction of improved shop methods, has shown the need of definite data for the application of belting need of definite data for the application of belting to machinery and led to the development of the re-sults contained in his paper. His data have been applied to belting in different plants for many years, giving an unusual opportunity to study the problem

The Question of Wear.

As our readers know, concrete paving for drive-ways and alleys and to a limited extent for streets, has been used to a considerable extent for some fifteen years or more. Within the last year or two the promotion of concrete paving has been taken up as a business proposition. It is hardly necessary to say to our readers that the character of concrete work of all clauses depends upon how it is executed. It is say to our readers that the character of concrete work of all classes depends upon how it is executed. It is entirely reasonable to believe that a concern making a specialty of concrete paving, developing a staff of experienced workers and following rigid practice in the selection and assembly of materials, and particularly in the preparation of the subgrade and the placing of the concrete, can produce results far superior to those possible with the ordinary contractor's concrete gang

to those possible with the ordinary contractor's concrete gang.

Admittedly concrete paving has special advantages of its own. It is smooth like sheet asphalt, and like that, may be more easily kept clean than any other pavement. It is absolutely uninjured by water and is unaffected by temperature, two important advantages over asphalt. It is, therefore, ideal from the sanitary point of view.

If pavements were to be chosen for automobile use

sanitary point of view.

If pavements were to be chosen for automobile use alone, concrete would probably stand at the head. Again the base and wearing surface are monolithic, and there is not the difficulty with defective blocks which causes so much trouble in brick paving and gave such a black eye to the asphalt block pavement in its early days.

in its early days.

Again, concrete is—or ought to be—one of the cheapest of paving materials, at least in any region where good stone and good sand are locally obtainable. This will be particularly the case where concrete paving is done on a large scale, so that machine mixing and economic methods of handling materials can be adopted. Bearing in mind prevailing prices for the concrete base for other kinds of pavement, we do not see why a price of \$1.25 per source vard. we do not see why a price of \$1.25 per square yard should not leave a good profit to the contractor, assuming, of course, that a large amount of work is to be done, and that good materials are available at

low prices.

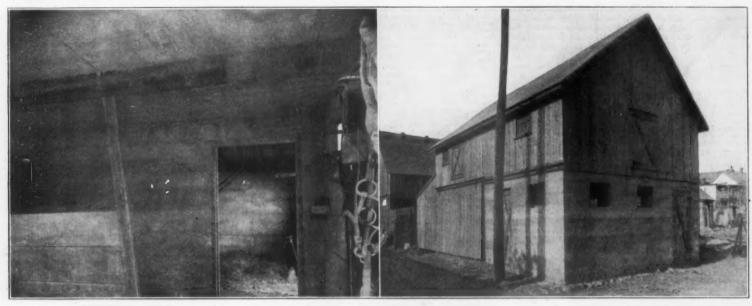
As to whether concrete or sheet asphalt or wooden block as laid in New York City would be the least slippery, we should suppose concrete would have some advantage if the wearing cost were made up with hard grit and grooved to give a hold for the calks of horseshoes. The noise from concrete is said to be about the same as from bricks. The pavement would be hard to cut into, if it were good concrete, yet concrete base is cut through all the time, and the difficulty in turning traffic on a repaired spot before the concrete has set hard might be overcome—with some disadvantage of obstruction—by dumping a pile of sand over the new concrete.

Admittedly the crucial question with concrete and low prices.

Admittedly the crucial question with concrete and one yet unsettled is how much wear will it stand?

The William Steele & Sons Company, of Philadelphia, has the contract for a sand pocket of concrete, 15x353 feet, on Berks Street wharf, Delaware River, for the De Frain Sand Company. Contract price,

Plans have been prepared by Oliver R. Parry and Elsey B. Bowen, Jr., associate architects, for a large reinforced concrete hotel building, 125x25 feet, at Goldfield, Nev., for the Mailview Mining Company.



INTERIOR VIEW.

A Concrete Stable.

A Concrete Stable.

WAYNESBORO, PA., Dec. 15.—The adaptability of concrete for the construction of stables as an economical material has been demonstrated by H. C. Geist of this city. We are showing two views of the stable, the interior and the exterior.

The building is 20x30 feet. The walls are of concrete, seven inches thick and are eight feet high. There is a six-inch division wall between the stalls and the buggy shed. There is a concrete ceiling over the stalls. This is 3½ inches thick and is reinforced by 5%-inch rods eighteen inches apart. The rods are stretched from the outside wall to the division wall, a distance of twelve feet. The rods rest on the center guides, and are bent so as to be buried in the concrete wall twelve inches. After the walls and ceiling were laid, the sub floor was laid. This consisted of stretching ½-inch fence wire with 2x4 inch mesh over iron rods. The concrete floor was mixed with one part cement to five parts of sand and gravel.

Thirty barrels of Security Portland cement was used in the construction of the stable.

used in the construction of the stable

High Art Concrete Work With Medusa.

High Art Concrete Work With Medusa.

Medusa White Portland cement, which is perfectly white in color, is worthy of special attention.

This product is well adapted to ornamental concrete work of the highest grade. It is a true high-testing Portland and perfectly stainless. It is equally adaptable for exterior or for interior finish and is guaranteed to pass the requirements of the American Society for Testing Materials. The plasterers are beginning to awake to the many advantages that it possesses, such as durability, ease of working, and best of all, its adamantine surface, smooth as velvet, which never cracks and can be washed, thus restoring it to its pristine loveliness when soiled. The Moos Building, 545 Wabash Avenue, has its ceilings made of Medusa White, and all of the interior work in Engineering Hall, Northwestern University, at Evanston, is of this beautiful material. It would be well for the architects to investigate these statements, as it is they who generally are responsible for introducing the beautiful both in exterior and interior construction. Figures in relief could be particularly construction. Figures in relief could be particularly



THE PORCH EFFECT IN CAST STONE.

A CONCRETE STABLE OF SECURITY CEMENT.

a concrete stable of security cement.

made with Medusa White, and it should be of interest to the plasterers to know this when undertaking any extensive highly decorative work. This material is also entering the field of art. A visit to the offices of the Sandusky Portland Cement Company, where several examples of high art work, such as placques, mural decorations, etc., are on display, will amply repay one. The two large urns, just inside the entrance of Marshall Field & Co.'s large store on State Street, are made of Medusa White. These urns were designed and executed by the celebrated sculptor Theodore S. Rowley, whose studio is at 344 Fifty-



CONCRETE TRIMMINGS USING MEDUSA WHITE CEMENT.

seventh Street. They are indeed exquisite specimens and have attracted universal attention. Mr. Rowley required a test to be made of the cement before executing his commission. The test was made by Robt. W. Hunt Company and is given below:

Bolling Test, O. K.
Fineness, No. 100 sleve, 95.56.
Fineness, No. 200 sleve, 79.54.
Initial set, 6 hours.
Final set, 7 hours, 5 minutes.

Einai	Ten	sile Strength.		
24 hrs.		7 days.	28	days.
	Neat.		Neat.	
355		695		951
370		706		908
380		730		961
	1-3.		1-3.	
155		238		294
170		212		320
180		220		317
For	exterior work	the beautifu	1 appearance	that

Medusa gives to the concrete is recognized at one Medusa gives to the concrete is recognized at once. We give several illustrations of buildings recently erected in Maywood, Ill., whose porches and trimmings, foundations and basement walls were all treated with this material. These buildings attracted much attention, and August Abelmann, the owner and designer, is delighted with them. Mr. Abelmann made the forms and mixed the concrete by an improved process, and claims that in consequence, the concrete is almost impervious to water. Robert C. Spencer, Jr., of Spencer & Powers, architects, Steinway Hall, Chicago, writes Mr. Abelmann after examining samples of his concrete, made in this manner, that "the color and texture are excellent, and they seem to be much more impervious to water than Bedseem to be much more impervious to water than Bed ford stone."

Another point raised by Mr. Abelmann was that if these buildings had been trimmed with cut stone the cost of such cut stone would have been \$1,500, while the cost in using concrete amounted to only \$400 and

EXTERIOR VIEW.

the effect was more pleasing and handsomer. All this work, too, was done according to plans previously drawn, it not being necessary to make the plans so as to meet the demands of the concrete work. No block machine was used, but all the mix was made in forms, according to specifications (Medusa cement being used exclusively) and by Mr. Abelmann's improved process.

Concrete Flower Pots.

The majority of people know something of concrete and of its advantages for a building material, especially where strength and fire-resisting qualities are a factor. Few, however, know of the wonderful ornamental possibilities which can be obtained with it, by a little ingenuity, in the selection of the proper aggregates and the imbedding of tile, arranged in varying designs.

aggregates and the imbedding of tile, arranged in varying designs.

A most interesting example of this work, the conception of Albert Moyer, is displayed in the permanent exhibition hall of the Concrete Association of America, New York. Here are to be seen a number of highly decorative flower pots. These look as though they were difficult to produce, but they are simple to make when one knows how. Ralph C. Davison, in the Scientific American for November 28, has an extended article on the subject, with illustrations, in which directions are given for making them. First it is necessary to make a mold. After completing the mold, the concrete mixture should be made up. This should consist of one part Portland cement, ing the mold, the concrete mixture should be made up. This should consist of one part Portland cement, one part good clean sand and four parts of an equal mixture of marble chips and trap rock varying in size from one-half inch to three-quarter inch. If marble is not available, very effective results can be obtained by using broken brick with the trap rock. Mix the sand and cement together thoroughly, while dry, wet down the marble and trap rock by dipping it in a pail or sprinkling with water, and then add it gradually to the sand and cement, thoroughly mixing the whole, and at the same time adding enough water to make it the consistency of a good heavy cream. Mr. Davison, who is secretary of the Concrete Association, has experimented with cement for years.

By the incorporation of colored tiles, one can produce some highly ornamental vases or pots for the

some highly ornamental vases or pots for the

garden.



BEAUTIFUL EFFECT OF CONCRETE TRIMMINGS.

Ornamental Concrete Work in Milwaukee.

Ornamental Concrete Work in Milwaukee.

The Park Board of Lake Park, Milwaukee, Wis., has recently completed the first extensive piece of cast or molded concrete work in that city. Lake Park overlooks Lake Michigan from a bluff, cut here and there by ravines. A carriage drive had been built connecting the bluff with the beach, and desiring to make a stairway for pedestrians, which would give access to an athletic field being laid out on a natural amphitheater just above the level of the lake and add architectural ornament to the park suggestive of Grecian simplicity and dignity, it was decided that east or molded concrete would not only give the white color, which would contrast beautifully with the blue of the lake and the green of the bank, but be a great deal less expensive than stone or marble work. The results have been very satisfactory to the board.

Starting at a small paved "lookout" in the rear

or marble work. The results have been very satisfactory to the board.

Starting at a small paved "lookout" in the rear of the park pavilion on top of the bluff, as shown in the illustration, winding stairs descend to a recess containing a sun dial. From this there is a further descent between Doric columns to the lake. Midway in this incline a terrace leads off to the south to the athletic field and to a graceful series of curving seats and steps. A tall flagpole surmounts the forks in which the terrace terminates. The Ionic sun dial, a number of Doric columns, some thirty-two pedestals, four hundred feet of balustrade and two bases for the flagpoles, each weighing three tons, are all of cast or molded concrete.

Messrs. Hutchens & Friske, Milwaukee, manufacturers of this cast concrete, can certainly be proud of their work on this job, as the balusters and columns have a smooth, fine surface and a crystalline whiteness. The concrete steps and walls were rough casted and were built by the Austin Construction Company. The whole scheme was designed and superintended by A. C. Clas, of the Milwaukee Park Board, his work being entirely gratuitous. The cost of the concrete work was \$5,000 and of the entire work \$16,000.

Cast concrete is cast in molding sand as iron is

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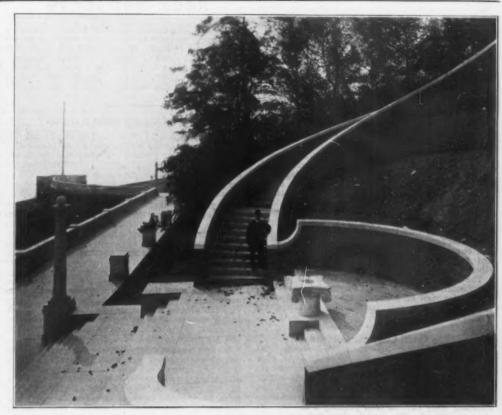
in If be ek. ile work \$16,000.

Cast concrete is cast in molding sand as iron is cast and is a patented process. In this case a white silica sand from Illinois was used. The sand was moistened with water and tamped hard around the wooden pattern. After the wooden pattern was removed, the liquid concrete was poured through a hole in the top and allowed to stand for twenty-four loves. The hardened concrete is then taken from the hours. The hardened concrete is then taken from the form and allowed to stand five or six days before the

form and allowed to stand five or six days before the sand still adhering to it is brushed off. The sand of the mold has absorbed the water from the liquid concrete and left it hard and possessing a smooth, fine finish. The finished product is then left to cure for sixty days, protected from the sun and weather before it is exposed to those elements.

The composition of this cast concrete was limestone dust, Chicago A A Portland cement and water, with waterproofing and densifier added. The limestone dust in this instance was brought from Carthage, Mo. Marble dust is also often used. The cement should be thoroughly aged to weather out any free lime contained in it, and should be as white as possible. possible.

Cast concrete is particularly serviceable in large work, in viaduct and bridge railings, etc., where the general effect desired would be too expensive if stone



ORNAMENTAL CONCRETE WORK AT LAKE PARK, MILWAUKEE-THE NOBLE LINES AND GRACEFUL CURVES.

were to be used. While it is just being introduced into Wisconsin, it has been used for the construction of entire buildings elsewhere. Toronto and other Canadian cities have a number of bank fronts built of it, and Minneapolis, Minn., and cities in the East contain a number of examples of it.

Reinforced Concrete Warehouses.

Reinforced Concrete Warehouses.

JACKSONVILLE, Fl.A., Dec. 10.—This city has taken up the reinforced concrete idea to a considerable extent lately. A unique warehouse, which has just been completed for the J. G. Christopher Company, is one of three which this concern expects to build. Contracts have been awarded to the Turner Construction Company, 11 Broadway, New York City.

Mr. Christopher became so convinced of the ultimate economy, stability and durability of reinforced concrete for building construction purposes that, although he was situated in the heart of Florida's timber section, with the resulting low cost of mill con-

ber section, with the resulting low cost of mill construction types of buildings, he decided to use it in preference to all other materials which came to his attention.

The one warehouse which has recently been completed is two stories in height, one hundred and five by one hundred and five, though designed ultimately to be five stories. This warehouse has one room sixty by one hundred and five feet without a post or strut in it. The arches span sixty feet from wall to wall, and are spaced sixteen feet center to center. In addition to carrying their own dead weight, they are required to support the second floor, which is designed for a three-hundred-pound live load per square foot and to carry also the second-story columns of this building, which is ultimately to be five stories high. The loads thus imposed upon these concrete arches are greatly in excess of what is ordinarily met with in bridge design. with in bridge design.

with in bridge design.

It was, of course, out of the question to build big abutments and haunches outside of the building line to take up the thrust at the springing line of the arch, so it was necessary to lay below the level on a proposed track pit heavy steel tie bars. These bars, which take up the thrust of the arches, connect with specially cast skewbacks set at the spring line of the arch. It was necessary to carrying out this work, to put the tie bars into initial tension, in order that when the concrete set, with the resulting shrinkage, there might be no undue stresses set up in the arches.

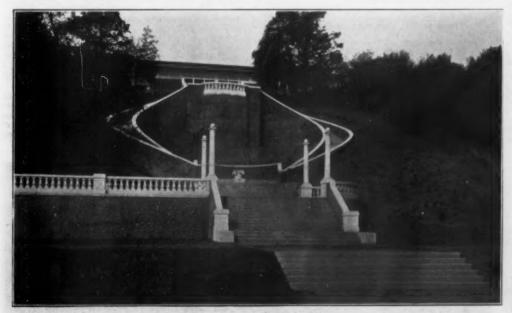
The conditions under which these buildings have

The conditions under which these buildings have been built are particularly favorable to reinforced concrete. In fact, the South generally offers a very desirable field for reinforced concrete construction. As is commonly known, the setting of concrete is most favorable under medium high temperatures. It is, of course, difficult to finish concrete surfaces under the full blaze of a very hot sun. For mass work, however, and for building work, where the forms protect the concrete from the direct rays of the sun, the high temperatures prevailing in the South, during the entire year, are very nearly ideal for quick and economical construction.

Aside from the great concrete arches, the fact that The conditions under which these buildings have

ical construction.

Aside from the great concrete arches, the fact that all the stone for the three Christopher buildings had to be conveyed from Clinton Point on the Hudson River, in schooners, to Jacksonville is a most interesting feature of this work. The State of Florida possesses little or no rock suitable for concrete. The quarries in Georgia were so far away that the prices which they were enabled to quote f. o. b. Jacksonville for three-fourth-inch broken stone were nearly thirty per cent in excess of what was found to be obtainable for Hudson River trap rock. It was therefore decided to buy all the stone for this work from the Clinton Point Stone Company, load it in schooners and ship it to Jacksonville. Up to the present time, there have been seven schooners of the average capacity of one thousand cubic yards, to sail from New York with broken stone billed for the Christopher buildings.



ORNAMENTAL CONCRETE WORK AT LAKE PARK, MILWAUKEE-THE WATERFRONT.

Some Good Machines Developed.

Some Good Machines Developed.

The Electrical Cement Post Company, Incorporated, of Lake City, Ia., is an energetic, hustling concern, and one that is rapidly expanding its already large business by up-to-date methods, and the fact that it makes some machines which are meeting with deserved popularity wherever installed. J. B. Smith is president of the company, R. E. Smith vice-president and L. P. Carter secretary and treasurer.

The concrete mixer developed by this concern is doing excellent work, while its drain tile machine, having a capacity of 4,000 or more tile per day, has been thoroughly tested out in actual practice and found to be all that could be desired. The mixer is especially adapted for mixing concrete where it is necessary to use it in large quantities, having a capacity of about two hundred and fifty sacks of cement per ten hours, making a one to four mixture. There are only a few successful drain tile machines upon the market, and the Electrical Cement Post Com-There are only a few successful drain tile machines upon the market, and the Electrical Cement Post Company is enthusiastic over the properties of its own type, believing that it cannot be surpassed by any other machine of its kind. Cement block machines and cement drain tile molds for large sizes, shapes and fittings are also manufactured, together with other necessary concrete equipment.

The cuts presented on this page show the plant of the Electrical Cement Post Company at Lake City, an interior view of a private office, and a stock of concrete drain tile manufactured by the company's special machine.

The Quail Concrete Company.

The Quail Concrete Company.

MILLER, NEB., Dec. 10.—The Quail Concrete Company is just finishing the concrete blocks for a store building, the first to be erected in Miller of concrete blocks. Besides the manufacturing of blocks, they do all kinds of concrete work. They use the Medina and the Bradley Manufacturing Company concrete block machine. They have on their property a fine bank of sand and gravel. The sand is clean and coarse and the gravel of reddish color. They write us that prospects in Nebraska are fine as cattle and crops are good.

Concrete Bridge Accepted.

Concrete Bridge Accepted.

The largest concrete bridge in Berks County, Pennsylvania, has been accepted by the commission appointed by the court. The bridge is located at Dauberville. It is three hundred feet in length, has four spans of seventy-five feet each. There are long wing walls and the whole presents an artistic appearance. Twenty-five hundred barrels of Portland cement were used. L. H. Focht & Son had the contract. Frank Greth, of Reading, Pa., was the foreman in charge. The cost of construction was \$20,000. construction was \$20,000.

Concrete Dam at Hume Completed.

Hume, Cal., Dec. 10.—The big concrete dam, which st approximately \$35,000, was finished recently.

J. E. Eastwood, civil engineer, constructed the dam

J. E. Eastwood, civil engineer, constructed the dam according to plans designed originally by him. The dam is six hundred and seventy-seven feet long on the crest of the structure and fifty-one feet high at its highest point. The Hume dam now completed is the finest of its kind in the world. Mr. Eastwood claims for it three strong points worthy of note. It is as strong as the strongest masonry dam can be made and in all other respects it is equal to it. It costs one-fourth less than the ordinary masonry dam could be built for, and, lastly, the rapidity with which the work progressed.

could be built for, and, lastly, the rapidity with which the work progressed.

The ground was broken for it on June 26. In the construction of the dam two thousand two hundred and seven cubic yards of solid concrete were used, besides over eight miles of old steel cable. The concrete was on the basis of one part cement, five of sand and crushed rock. Steel cables were cut in length and deposited in the concrete arches and also laid serpenting fashion to connect the arch with the back of the tine fashion to connect the arch with the back of the buttress and adjoining arch to bind and grip the en-

tire concrete masonry.

Speaking of immense spans of concrete, probably the largest concrete bridge in the world spans the Migra River in Italy. It consists of five spans, each arched to the chord of about fifty meters. It is perhaps the greatest of its kind in reinforced concrete in existence today. Attilio Muggia, the famous Bolognese engineer, was in charge of the construc-

Buy a Hen and Build a Home.

The bird with a bunch of feathers on one end and a cackle on the other has the world beat as a wealth producer, said the president of the Northwestern Cement Products Association to a representative of ROCK PRODUCTS while discussing the possibilities of the growth and development of the cement business in the northwest.

Do you know that at present, prices, in this neck of the woods, a dozen and a half of eggs are worth as much as a barrel of Portland cement. There is no excuse for a working man going homeless in this age, when the only thing he has to do, is to buy a hen and build a home. If you have more money, buy a cow, and you can build sooner, as two pounds of butter will buy a barrel of Portland cement. That's enough will buy a barrel of Portland cement. That's enough to make a cow chesty, and throw up her tail in glee, and, at the same time, make a cement manufacturer weep tears of grief. Something is radically wrong with the produce market, or with the cement market. Either the farmer is getting more than his share of the wealth of the country, or the manufacturer is putting his goods on the market at a loss.

ting his goods on the market at a loss.

When a manufacturer must buy tracts of land, containing raw material, put several million dollars into a factory, quarry rock and shale, convey it to the mill, add gypsum, pay for superintendency, for labor, for office help, for supplies, for salesmen, for repairs, for overhead expenses, for coal, for advertising, and sack it and put it on the car, and then market it on an equal basis with a dozen and a half of eggs, or two pounds of butter, it is time for them to sell out and invest in a hennery or a cow pasture.

Three hundred and eight pounds of Portland ce-

Three hundred and eight pounds of Portland cement equivalent to two pounds of butter! Isn't that a beautiful outlook for a man with his money tied up in the manufacturing of Portland cement?

Will Build Concrete Splash Dam.

John McDyer, of Catlettsburg, Ky., a skilled civil engineer and an expert in concrete construction, has been awarded the contract for what is probably the

been awarded the contract for what is probably the only concrete splash dam in the world, by the Yellow Poplar Lumber Company, of Coal Grove, O. The dam will be built on the head of the Levisa Fork of the Big Sandy River, in Dickinson County, Virginia. This dam will have four main piers and five sluiceways, forty feet each, and will be twenty feet high. This dam is to be built for the special purpose of carrying the saw logs on twenty-eight thousand acres of land through "The Breaks," after which the same may be rafted and taken to their mills at Coal Grove. The estimated cost of this dam complete is about \$26,000. Sam Collier, of Paintsville, W. Va., has the contract for the concrete work. tract for the concrete work.

How to Mix Concrete on the Farm.

One of the most interesting pamphlets that has come to our notice lately is what is termed "Bulletin No. 20, How to Mix Concrete on the Farm," published by the Association of American Portland Cement Manufacturers, and compiled by Percy H. Wilson and Clifford W. Gaylord. This is a thorough and exhaustive treatise and the subject matter is so ably prepared that it must take instant rank among the best concrete literature on this most vital sub-ject. In the introduction it says: "This bulletin is issued for the purpose of instructing the individual user, the practical man, who desires to take advantage of the utility of Portland cement concrete and yet has not the time to obtain a technical knowledge of this subject. This bulletin tells him what concrete is, how it can be made, and what he must not do if he is to meet with success. No attempt will be made to discuss reinforced concrete design, as that subject will be handled in subsequent bulletins on specific

While the bulletin is written for the primary purpose of instructing the novice in the use of concrete, there is much of interest to those who have progressed further. It should be in the hands of every concrete further. It should be in the hands of every concrete worker in this country. Copies can be secured by writing to Secretary Percy H. Wilson, of the Association of American Portland Cement Manufacturers,

Erecting a new Factory Building,

CHARLOTTE, MICH., Dec. 14.—I. W. Bottomley & Son are erecting a factory building twenty-four by sixty feet, in which they will manufacture everything in the concrete line, such as blocks, brick, drain tile, water tables, porch columns, walks, etc.

They have recently adapted a new brick machine with molds for several kinds of plain and fancy brick, and a machine for making fence posts reinforced with steel and another for the manufacture of tile. They anticipate a big season, and the city is just awakening to the possibilities of concrete construction.

Good Association Man.

Goldfield, Ia., Dec. 10.—James L. Shearer, a practical concrete worker connected with Belnap & Shoen, says that he has had about six years experience in the manufacture of concrete blocks and concrete draintile. His concern has made 400,000 tile this summer of sizes from 4 inches up to 24 inches. Some of the 24-inch tile weighs 700 pounds each. They have not made many building blocks this year, but in former years this was the principal branch of their business. The tile machine used is one of the Schenk machines built at Waterloo, Ia. He says: "I am a machines built at Waterloo, Ia. He says: "I am a contractor myself and have been building lots of sidecontractor myself and have been building lots of side-walks this year. Also a number of barn floors, water tanks, foundations for houses and barns, street cross-ings and cellar floors, but this year I have built only one block house. I use a Little Giant mixer for my concrete work and find that it does very well. I am a charter member of the Iowa Cement Users' Asso-ciation and also a member of the national associa-tion ever since it was started."

Contracts have been let for the Dunne Investment Company building to be erected on the northwest corner of Stockton and Ellis Streets, San Francisco, Cal. It will be of reinforced concrete, six stories and

Cal. It will be of reinforced concrete, six stories and basement. Macdonald & Applegarth are the architects. The cost of the building will be about \$55,000. Hayes Brothers, Belle Fourche, S. D., who have the contract for the big storage reservoir of the Belle Fourche irrigation project, are preparing for next year's work and have sublet several portions of the work.

E. Duryee, 122 Occidental Boulevard, Los Angeles, Cal., has recently completed a concrete residence, the first of its kind to be erected in California. It is of monolithic construction and was erected at the rate of monolithic construction and was erected at the rate of one foot each day, it having been possible to lay concrete a foot thick around the building and set another layer of like thickness the following day. No seaffolding was necessary on the interior or exterior for holding the concrete in place. It settled during a night and grew stronger with each succeeding day. The cost is \$5,000.

Louis Curtiss, an architect, has been granted a permit for the construction of a three-story reinforced concrete business building at 1118 McGee Street, Kansas City, Mo. The structure is to have a frontage of forty-six feet on McGee Street and will be 115 feet deep. It will cost \$20,000.







CONCRETE DRAIN TILE IN STOCK. INTERIOR OF PRIVATE OFFICE. VIEW OF OFFICE BUILDING. THE HOME OF THE ELECTRICAL CEMENT POST COMPANY, LAKE CITY, IA.



ANNUAL MEETING.

Large Attendance Confirms the Feeling of Returning Prosperity.

NEW YORK, Dec. 9 .- The annual meeting of the Association of American Portland Cement Manufacturers has been held at the Hotel Knickerbocker for the past three days. President John B. Lober in the chair and Secretary Percy H. Wilson recording.

The usual good attendance of the annual meeting was in evidence. It has been stated that ninety per cent of the capacity for the manufacture of Portland cement in the United States was represented in the meeting just closed, by the president, or some other officer, of each of the principal cement com-

The usual session of the Executive Committee was held previous to the sessions of the regular conven-tion. The sessions of Tuesday, December 8, were taken up with the routine business of the association, and the election of the following officers was announced:

President—John B. Lober (Vulcanite). Vice-President—Edward M. Hagar (Universal).

President—John B. Lober (Vulcanite).
Vice-President—Edward M. Hagar (Universal).
Treasurer—Ernest R. Ackerman (Lawrence).
Executive Committee—John B. Lober (Vulcanite), chairman; E. M. Hagar (Universal); E. R. Ackerman (Lawrence); N. D. Fraser (Chicago); George E. Nicholson (United Kansas); T. H. Dumary (Helderburg); A. F. Gerstell (Alpha); W. H. Harding (Coplay); R. W. Lesley (American); Conrad Miller (Dexter); L. M. Wing (Wolverine); J. W. Kittrell (Catskill); George S. Bartlett (Western); E. M. Young (Lehigh); W. S. Mallory (Edison).
Tuesday evening the annual banquet was held and the irresistible George S. Bartlett acted as toastmaster, assisted by F. M. Douglas, while B. F. Affleck acted in the capacity of sergeant-at-arms. Bins full of wit were turned loose and bags of puns by the carload were scattered in the atmosphere, so much so that many of the witticisms were repeated and helped to make up the sentiment of good fellowship that prevailed during the entire gathering.
The session of Wednesday was devoted to the consideration of two papers, "The Association of German Portland Cement Manufacturers, Its Aims and Results, Summary of Proceedings for 1908, New German Cement Specifications," by Robert W. Lesley, which follows in full:

lev, which follows in full:

THE ASSOCIATION OF GERMAN PORTLAND CEMENT MANUFACTURERS AND THE NEW GERMAN CEMENT SPECIFICATION

BY ROBERT W. LESLEY AND DR. E. W. LAZELL.

CEMENT SPECIFICATION

BY ROBERT W. LESLEY AND DR. E. W. LAZELL.

It has been the practice of our Association to have every year a summary of the proceedings of the Association of German Portland Cement Manufacturers. This sister organization of ours, in fact we might call it the mother organization, dates beyond the beginnings of our own industry in this country. Dr. Rudolph Dyckerhoff recently read a paper on the origin of the Association of German Portland Cement Manufacturers, going into the history of that organization at considerable length.

It appears that the Association for the manufacture of Bricks, Clay Goods, Lime and Cement was founded by a small number of interested parties. Out of this general Association, which is still in existence, the German Cement Association grew. During the meetings of the first named body the difficulty of testing of materials came about. A committee to have charge of testing matters was formed and in January, 1877, about twenty German Portland cement manufacturers met at the call of Dr. Delbrueck, of Stettin, and formed the Association of German Cement Manufacturers.

The proceedings of that body for the past thirty years are familiar history to all having to do with the cement industry. Its cooperation with the various branches of the German government, its affiliation with the different engineering and architectural bodies having to do with cement, form part of the records of the history of our industry in central Europe. It was that body that had, practically, the first to do with the making of cement. Its work of establishing this definition, which formed a very important part of the deliberations of the Association, and its pledge to the public that its members should only make cement containing not more than three per cent of foreign matter for the purpose of regulating set, is well known to all of you.

From year to year the deliberations of the German Association have been marked by the greatest seriousness and devotion to the best interests of Portland cement. I

hoff—have been large contributors to the literature of our industry. In the investigation of the effect of the addition of slag to cement; in the investigation of the process of the addition of slag to cement in the investigation of Pruzzolan mortars; in the examination of the behavior of cement in salt water, the German Association has been to the forefront, and it is to the work of that association, whose proceedings every year form part of the papers that are presented before us, that we owe much of our knowledge on many questions in our industry.

The meeting for 1908 was held in Berlin during the last week of February. There were present representatives from eighty-five factories, the total production of valich was stated to be 28,400,000 bareris, or an increase of 1,650,000 barrels over the previous year. There were representatives present from practically all of its members and, as usual, also representatives from the various scientific, engineering and architectural societies having to do with the use of cement, as well as from the government departments dealing with the same material. The report dealing with the laboratory of the association, which is one of the principal laboratories in Europe for the handling of cement and kindred materials, was one of the features of the meeting. The report shows that during the year 1907 samples were procured in the open market representing the product of each factory in the German Cement Association. These were tested in the laboratory and embraced altogether ninety-one cements. They were tested for (1) the physical tests according to the standard method and required by the standard specifications, and (2) a chemical analysis of each cement. These figures show in a general way that the average tensile strength in 3:1 mortars at twenty-eight days for the past four years runs as follows:

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The average compression strength runs 3,514 pounds, 3,460 pounds, 3,567 pounds, 3,283 pounds.
The fineness on the 900 mesh sleve was as follows: 1.36, 1.95, 1.76, 1.62.
The loss on ignition showed the following average

cemen	ts	3	1	N	e	re	2	1	F	λÌ	u	n	u	8	J	CI	10	1:	81	a	D	ıt		1	n		a	ĺ,	7	and	V
1907																														2.87	
1906	*	×	×	×					,							,	8		×	8			×	×		8		×	*		
1905		9			r			ş	h					*	÷		×	è				,		e	×	8	×	×	0	2.66	
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All cements were volume constant in air and water. The number of cements which failed to pass the accelerated test for soundness was about the same as in 1906. The physical tests may be said to show generally that the loss on ignition developed a slight gain over the previous years, while the fineness on the 900 mesh sleve was practically not changed, and the same may be said as to that on the 5,000 mesh sleve.

From these facts the indications are that there has not been much difference in the production of Portland cements. It will also be noted that the physical tests and tensile and compression strengths show very little change during the past four years.

The effect, of course, of the laboratory procuring in the open market samples of the product manufactured by each factory and submitting them to physical tests according to the standard method and specification, is to keep up the standard of German Portland cement. These reports are made public at the meetings of the association, though the individual brands are not mentioned. This method has a considerable moral effect upon the theorem of the control of the control of the standards.

The chemical test for the years 1904 and 1907 inclusive, so far as the principal ingredients are concerned, are as follows:

Maxi- Mini- mum. mum.

			Average	value	to disease the
	. mum.		1906.	1905.	1904.
Insoluble in by- drochloric acid 8.15 Silica 24.04 Alumina 9.08 Iron oxide 4.62 Lime 67.60 Magnesia 3.57	0.37 17.23 2.96 1.23 57.72 0.51	1.75 20.56 7.37 3.24 62.74 1.63		22.39 7.83 2.51 63.09 1.68	22.47 7.74 2.65 63.06 1.64
Sulphuric anhy- dride 3.30 Attention is here concentral tests.	0.88 alled to	1.82 the va	1.71 riations	1.76 in the	1.76 above

Standard Sand.

In connection with the work of testing, the laboratory is also charged with the furnishing of the standard sand, which is supplied in sealed packages of varying sizes to all those having to do with the testing of

sand, which is supplied in sealed packages of varying sizes to all those having to dq with the testing of cement.

As illustrating the importance of this branch of the laboratory's work, the report goes on to say that since May, 1907, thirty-six average tests were made of the standard sand from Freienwalde, which serve for purposes of control, and that during the same period the laboratory sold no less than 1,610 sacks of the same sand between that date and the end of the year 1907.

The German standard sand is obtained from a tertiary quartz bed of the brown coal formation in the vicinity of Freienwalde. The nearly while sand is washed in a washing machine and artificially dried. The dry sand is sleved by means of a suspended sieve. The coarse sand is first removed by one sieve and the fine by another. The output of each day is controlled by tests for the size of grains and purity in the Royal Testing Material Station, Gross-Lichterfelde.

For determining the size of grains, sleves of sheet brass are used .25 mm. (.0098 inch) thick, having circular openings 1.350 and .775 mm. diameter (.053 inches and .0305 inches).

After the controlling tests the sand that is standard is packed in sacks and each sack is closed with a seal of the Royal Testing Material Station.

In addition to the tests made as above stated for the official information of the members of the association, the laboratory made in all 512 tests in 1907 as against 344 in 1906, a gain of 168. These included 64 tests of raw material, 485 standard tests, 15 cement analyses, 26 determinations of foreign additions to cement, and 50 tests of concrete cubes. In addition to this there were a number of materials tested. The income of the laboratory from testing was 12,000 marks, or in round figures about \$3,000.

Scientific Investigations.

I—The laboratory participated in the work of the mmittee for the revision of the standard specificacommittee 101 tions.
2—The comparative strength tests, begun in 1906 with cement from all the members, were carried on:

By hardening under water.

(b). By hardening in air.
(c) By hardening by exposure to the weather.
(d) By combined hardening (7 days in water, remainder in air).

In all cases the tests included 28-day, 90-day and 360-day tests.

3—The laboratory also participated in the work of committee No. 42, of the International Society for Testing Materials, in reference to uniform testing of hydraulic materials by means of prisms, and the preparation normal sand.

of normal sand.

4—A series of investigations were made covering the transverse, tensile and compression strength of prismatic bars according to the method of Feret and Schule.

5—The tests begun in 1906 for the control of the setting time of the members' cement at regular intervals of time were carried on (after 3, 6, 9 and 12 months'

of time were carried on (after 3, 6, 9 and 12 months' storage).

3—Comparative tests for the preparation of neat cement test pieces were carried on by means of:

(a) Placing in the mould by hand.

(b) Placing in mould by the hammer apparatus.

7—Tests were undertaken concerning the durability of cement by storage, with 10 fresh cements:

(a) In the condition as received.

(b) By the addition of sufficient gypsum to give a sulphuric anhydride contact of two and one-half percent.

The cement being stored as follows:

(a) In air tight tin boxes.

(b) In sacks.

These were tested after 28, 90, 180 and 360 days' storage.

rage.

—Two cements from Bologne were tested as givenler No. 7.

storage.

8—Two cements from Bologne were tested as givenunder No. 7.

9—At the request of the committee various foreign cements have been investigated.

10—Comparative tests were arranged to determine the loss on ignition of:

(a) Fortland cement.
(b) Iron Fortland cement.
(c) Natural cement.

(c) Natural cement.

11—Tests were arranged with Portland cement, Iron-Fortland cement and natural cement to learn in what manner the time and method of heating affected the specific gravity.

Investigations were carried out by the laboratory with eighty-seven different cements to determine the effect of storage upon setting time. The setting time was determined as receiving after storing 3, 6, 9 and 12 months. The results show that no definite conclusions can be drawn. Cements which gave a quick or medium setting time as received were generally slowed by storage, while several of the slow setting cements were quickened.

A series of investigations was also undertaken to determine the loss on ignition and the specific gravity of Portland cement, iron Portland cement differed mater.

cement.

The loss on ignition of Portland cement differed materially from other cement. Portland cement gave the full loss in about three minutes' heating by the Bunsen burner. Natural cement required about twenty minutes' heating, while the siag cements show in the first three minutes a loss, but on longer heating a gain in weight. The behavior, therefore, of cements by heating serves to distinguish the character of the cement.

New Standard Specifications

New Standard Specifications.

The report of the laboratory on Standards and Specifications for Testing Portland Cement was presented. These are the modified specifications referred to above, and in connection with which the tests mentioned were conducted. The new definitions are extremely interesting and are very well stated. They differ from the American standard specifications in the sense that they embrace under a single head Methods of Manipulation and Standard Specifications, and, further, that in each section there is given (1) the specification itself and (2) right below it, full explanations under the title of Essential Principles and Explanations. In this way the reader, or the tester, has before him on a single page the actual requirement of the specification and the reason for its adoption, and the methods for its use.

The definition of Portland cement is given as follows: "Portland cement is a hydraulic cementing material with not less than 1.7 parts by eight of lime to 1 part by weight of soluble silica, alumina, iron oxide, prepared by fine grinding and intimate mixing of the raw materials, burning at least to sintering and fine grinding.

"To this cement shall not be added more than 3 percent of other material for particular purposes.

"The maximum magnesia content shall not exceed a per cent and the sulphuric anhydride shall not exceed a per cent and the sulphuric anhydride shall not exceed a per cent and the sulphuric anhydride shall not exceed a per cent and the sulphuric anhydride shall not exceed a per cent and the sulphuric anhydride shall not exceed the prosession of the association, are of considerable interest, they are also given below:

"Portland cement is packed in sacks and barrels. These the grows weight the terms were cert precise the grows weight the terms."

below:
"Portland cement is packed in sacks and barrels. The packages must carry, besides the gross weight, the term 'Portland Cement' and the name of the manufacturer, clearly printed thereon.
'Loss by sifting out and variations from the standard; weight to the amount of 2 per cent are allowable.

Essential Principles and Explanations.

As various weights are in use in sacks as well as reis, it is absolutely necessary to give the gross

"As various weights are in use in save to give the gross weight.

"By the term Portland cement, the purchaser shall be assured that the material is in accordance with the definition given above.

The Association of German Portland Cement Manufacturers obligates and controls its members to maintain the standard conditions given above and the therein required properties for Portland cement.

This obligation reads:

"The members of this association are permitted to bring into the market under the term 'Portland cement' only such material as is prepared from an intimate mixture of time and clay materials as essential ingredients, burning to sintering and subsequent grinding to the finest of four. They obligate themselves not to recognize as Portland cement any material which is prepared otherwise than above stated, or which during or after the burning has been mixed with foreign bodies, and to look upon the sale of other material under the name of Portland cement as deceiving the purchaser.

These requirements are not to forbid the addition of not more than 3 per cent of other material to the Portland cement for the purpose of regulating the setting time.

"The members of the association further obligate themselves to furnish Portland cement which will in all respects meet the requirements of the Prussian minister of nubile works.

respects meet the requirements of the Prussian minister of public works.

"When a consumer requires cement for a particular purpose, coarser ground than the requirements, or colored, its preparation is allowable.

"If a member of the association offends the above given obligation, he shall be expelled from the association. His expulsion is made known publicly.

"The manufactured product of each member of the association is tested yearly in the laboratory of the association at Karishorst near Berlin; and the results are given out at the general meeting of the association."

Setting.

Setting.

The initial set of normal Portland cement shall not take place in less than one hour after gauging. For particular purposes a quicker setting Portland cement can be prepared; such cement, however, shall be so marked on the package.

Essential Processing P

marked on the package.

Essential Principles and Explanations.

The initial set of normal Portland cement should require at least one hour, because the beginning of the setting is important; on the contrary, if a definite interval of time is required for the hard set it is of less value in the use of Portland cement, if the process of hardening is completed in a shorter or longer time. Possibly specifications concerning the setting time should, therefore, not be limited too closely.

Constancy of Volume.

Portland cement must be volume constant. It shall be recognized as decisive proof of this that when a part of neat cement, prepared on a glass plate and protected from drying out, placed under water after twenty-four hours, shows no sign of curvature or cracking on the edge after a long time.

Fineness of Grinding.

Portland cement shall be ground so fine that it leaves a residue of not more than 5 per cent on a sleve of 900 meshes per sq. cm., the width of the mesh of the sleve being 22 mm. (Translator's note—Corresponding approximately to a sleve having seventy-six meshes per linear inch, width of the mesh being .0087 inch.)

Strength Tests.

The binding strength of Portland cement shall be determined by testing a mixture of cement and sand. Tests shall be made for the compression and tensile strength according to uniform methods, by means of test pieces prepared the same way and of the same area and with the same apparatus.

The compression tests are to be made on cubes of 50 sq. cm. (7.75 sq. ln.) surface and the tensile tests on test pieces having a least section of 5 sq. cm. (.775 sq. in.)

Compression and Tensile Strength.

compression and Tensile Strength.

Slow setting Portland cement shall show at least 160 kg. per sq. cm. (2,275 lbs. per sq. in.) compressive strength when tested with three parts by weight of standard sand and one part by weight of Portland cement after twenty-eight days' hardening (one day in air, twenty-seven days in water). The tensile strength shall be at least 16 kg. per sq. cm. (227 lbs. per sq. in.).

The strength of quick setting Portland cement is generally less at twenty-eight days than that given before. On this account the strength specified should be regulated by the setting time.

The compression strength must be at least 200 kg. per sq. cm. (2.844 lbs. per sq. in.) by testing after one day in moist air, six days in water and twenty-one days in air of a temperature of from 15 to 30 degrees C. (59 to 86 degrees F.), the tensile strength shall be at least 200 kg. per sq. cm. (284 lbs. per sq. in.).

Compression tests may be made at an earlier time after one day in moist air and six days in water when the compressive strength shall be at least 120 kg. per sq. cm. (1.760 lbs. per sq. in.).

Many of the "essenial principles and explanations" have been omitted in this paper because of their length and the desire of the writer not to tire his audience. They have, however, been translated and are of considerable interest as showing the work the Germans are doing in the field of specifications.

Of course, what they have done is largely the work of a single association, while the work on similar lines in our country has been done by representatives of the American Society of Civil Engineers, the American Institute of Architects, and the American Rallway Engineering and Maintenance of Way Society.

Report of the Status of Mixed Cement.

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Report of the Status of Mixed Cement.

Following the presentation and discussion of the specifications a most important discussion took place on the "Status of Slag Admixtures." The subject was introduced by Dr. Goslich, of Zuelichow, and was participated in by Dr. Eggeman, of Berlin; Dr. Rudolph Dyckerhoft, of Amoneberg; Director Hermanni; Dr. Moye, of Berlin, and others. The principal speaker was Dr. Rudolph Dyckerhoff, who went very fully into the subject of the addition of ground slag to Portland cement, a material which in Germany is sold under the title of "iron Portland cement," which title the German Cement Association strenuously objects to. In connection with this Dr. Dyckerhoff submitted a number of comparative tables of iron Portland cements and Portland cements manufactured in the regular way, and concluded by arguing strongly against the designation of iron Portland cement for materials of the character described, namely, mixtures of pulverized slag and Portland cement.

Report of Sea Water Commission.

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Report of Sea Water Commission.

Dr. Dyckerhoff reported for the commission that there was little to be added to the report rendered in 1906, which covered the ten-year tests.

Tests have been undertaken under the auspices of the association with cements containing various amounts of sulphate; these, however, have not sufficiently advanced to give much data. The conclusion to be drawn from all the experiments so far carried out is that Portland cement, if correctly handled, is suitable for use in construction exposed to the action of sea water.

Other Papers.

Dr. Cabolet presented a paper on the phenomena of reiling when small amounts of Portland cement were

treated with large volumes of water. The same subject was brought before the association the previous year by Dr. Michaelis. Cabolet in his investigations treated 3½ grams of cement with I liter of water and in every instance, with one exception, the cement swelled, increasing greatly in volume. He further found that the swelling commenced when the water had dissolved .25 to .29 grams of lime per liter, and that after the swelling there was present .45 to .695 grams CaO in the liter. The time required for the water to attain the saturation given, or for the swelling to commence is very variable, from one to eighty-four days. The swelling is completed in from five to twenty-four days. The average time required for the swelling to begin is from two to three days, and six to eight days are required for the completion. The increase in volume is very great, the volume of the flakes being in some instances 700 times that of the original cement used. The flakes are first graylsh yellow, the color gradually changing to white. Analysis of the flakes shows them to contain 5.16 to 7.14 per cent less lime than the original cement.

Dr. Kassai, Japan, presented an interesting paper dealing with the increase in temperature of large masses of cement.

The Commission of Revision of the Normal Standard undertook an extended investigation covering the method of storing test pieces, whether in water alone or in air. The test pieces in water were stored in the usual manner; those in air were kept one day in the moist closet, then stored in air, at room temperature, in a box containing pieces of quick lime. The tests included tension and compression, determination of 1.3, 1.5 and 1.7 mixtures at 28, 180 and 360 days. Tables are given showing the results of 50,000 test pieces. The results obtained from the air tests with Portland cement are in general higher than those obtained from the water tests. With slag cement the reverse is true. The method of air storage is not, however, recommended. A new method of hardening was also investigated, the test pieces being kept one day in moist air, six days immersed in water and twenty-one days in air. The results obtained by the ustomary water storage. Further investigations are being carried on along this line.

There were also presented to the association a number of interesting and valuable papers on more practical subjects, including the use of concrete in dam construction, etc. Various types of grinding machinery were likewise discussed, including a ball mill with a new type of plate, the Kent mill and the Fuller-Lehigh mill. The association also listened to some valuable papers on the advances in the technic of the American Portland Ce-

"'A New Viewpoint of the American Portland Cement Industry," by Edwin C. Eckel. The latter paper deals with the future possibilities of the Portland cement industry, with practical suggestions, which were highly appreciated by the manufacturers present.

Tuesday and Wednesday luncheon was served in the convention hall at 1 p. m., so that it was not necessary for the members to leave the room and thereby become scattered about the great city.

During the luncheon on Wednesday, Richard L. Humphrey, consulting engineer of Philadelphia, made a talk on the subject of standard sands for the use of the manufacturers' laboratories. He suggested a talk on the subject of standard sands for the use of the manufacturers' laboratories. He suggested the establishment of distribution points for authorized testing sands so as to equalize the cost of freight to the various cement factories. Mr. Humphrey as the head of the Government's Testing Laboratory at St. Louis is exceptionally well posted upon the location of sand deposits as well as the facilities for their distribution. distribution,

A growing feeling of confidence in the immediate A growing reeing of conneence in the immediate future pervaded the convention and in spite of the fact that the past year has been very unsatisfactory both as to prices and the volume of business, practically everyone present expressed the opinion that the panic feeling in business has disappeared and that 1909 will see the Portland cement industry lined up with a strong front and a better demand to assist the sustaining of prices that contain a reasonable profit at least.

One manufacturer remarked: "In looking over our records we are able to observe that the turn was taken in October and there has been a steady improvement ever since. In fact, I believe the distractions of the past year would be impossible to be continued.

Few meetings of the association have ever had such a good representation of the entire possible output of the country. Two new mills were reported and have begun operations in the manufacture of Portland cement, the Continental at St. Louis, Mo., and the Cowell plant at San Francisco, Cal.

THE ATTENDANCE.

THE ATTENDANCE.

Alma Portland Cement Co., Wellston, O.: Charles H. Zehnder, New York City; D. S. Hoover, Wellston, Alpha Portland Cement Co., Easton, Pa.; A. F. Gerstell, Easton; J. B. Wight.

Alsen'a American Portland Cement Works, 45 Broadway, New York; Robert S. Sinclair, W. P. Corbett, New York; Max Cappus, Alsen,

American Cement Co. of New Jersey, Philadelphia, Pa.; Robert W. Lesley, F. J. Jiggens, R. E. Griffith, C. M. Camm, W. J. King, Jr.

Atlas Portland Cement Co., New York; Alfonso de Navarro, Howard W. Maxwell.

Bath Portland Cement Co., Bath, Pa.; B. F. Stradley, New York; F. B. Franks, F. M. Hoover, George E. Roydehouse, John A. Miller.

Buckhorn Portland Cement Company, Philadelphia, Pa.; J. M. Patten.

Castalia Portland Cement Co., Pittsburg, Pa.; George W. Hackett, Charles L. Johnson, Castalia.

Catskill Cement Co., Cementon, N. Y.; J. W. Kittrell, Cementon.

Cementon. Chicago Portland Cement Co., Chicago, Ill.; Norman D.

Fraser, J. U. C. McDaniel, Chicago; D. D. Drummond.

Oglesby,
Coplay Cement Manufacturing Co., Philadelphia, Pa.;
W. H. Harding, Abraham Israel, C. H. Breerwood,
James F. Twamley, J. C. Detwiler.
Creacent Portland Cement Company, Wampum, Pa.; W.
J. Prentice, Pittsburg.
Dewey Portland Cement Company, Kansas City, Mo.;
F. L. Williamson.
Dexter Portland Cement Co., Nazareth, Pa.; Conrad Miller, John A. Miller, Joseph Brobston, Dr. Richard K. Meade.
Diamond Portland Cement Co. Cleveland, O.; Lyman A.
Reed.

Diamond Portland Cement Co., Cleveland, O.; Lyman A. Reed.
Dixle Portland Cement Co., South Pittsburg, Tenn.; George E. Nicholson, Iola, Kan.
Edison Portland Cement Co., Stewartsville, N. J.; W. S. Mallory, E. Meyer, New York City; Dr. H. E. Kiefer. Glens Falls Portland Cement Co., Glens Falls, N. Y.; George F. Bayle, Byron Lapham, F. W. Douglas.
Helderberg Cement Co., Albany, N. Y.; T. H. Dumary, F. W. Kelley, C. H. Ramsey.
The Hecla Co., Detroit, Mich.; John F. Bush.
Iola Portland Cement Co., 101a, Kan.; George E. Nicholson, Iola; E. R. Stapleton, Kansas City.
Lawrence Cement Co. of Pennsylvania, Siegfried, Pa.; Ernest R. Ackerman, Plainfield, N. J.
Lehigh Portland Cement Co., Allentown, Pa.; Harry C.
Trexier, E. M. Young, George C. Sykes, P. A. Jandernal, Cleveland; Frederick E. Paulson, Indianapolis.
Samuel H. French & Co., Philadelphia, Pa.; C. Weber Jones.

Samuel H. French & Co., Philadelphia, Pa.; C. Weber Jones.
Maryland Portland Cement Co., Baitimore, Md.; Harry B. Warner.
Thomas Millen Co., Wayland, N. Y.; Deaune Millen, Deaune Millen, Jr., Wm. H. Wiltse, Syracuse.
Nazareth Cement Co., Nazareth, Pa.; A. W. Paige, New York City; M. J. Warner, Charles Bye.
New Aetna Portland Cement Co., Detroit, Mich.; John A. Myers.
Newaygo Portland Cement Co., Grand Rapids, Mich.; D. McCool, W. J. Bell, Newaygo.
Northampton Portland Cement Co., Stockertown, Pa.; Conrad Miller, Nazareth; F. C. Willbrand, T. J. Setze, New York City, H. A. Schaefer, Stockertown.
Omega Portland Cement Co., Jonesville, Mich.; Amos Kendall.
Peninsular Portland Cement Co., Jackson, Mich.; John W. Shove.

Kendall.

Peninsular Portland Cement Co., Jackson, Mich.; John W. Shove.

Penn-Allen Portland Cement Co., Allentown, Pa.; William R. Yeager, W. E. Erdell, S. G. K. Stradley, Joseph Loughrin, J. A. Sigman.

Pennsylvania Cement Co., New York; William N. Beach, A. H. Alker, Robert E. Bonner, W. W. Bayle.

Phoenix Cement Co., Nazareth, Pa.; William Turner, George W. Laub, Mr. Goff.

Standard Portland Cement Co., Charleston, S. C.; J. R. Hanahan.

Sandusky Portland Cement Co., Sandusky, O.; A. St. J. Newberry, W. B. Newberry, Cleveland; S. B. Newberry, Sandusky.

St. Louis Portland Cement Co., St. Louis, Mo.; A. H. Craney, Jr., H. Struckman, Mr. Block.

The Superior Portland Cement Co., Charleston, W. Va.; Justus Collins, C. F. Harwood, J. B. John, Superior, O. United Kansas Portland Cement Co., Charleston, W. Ya.; Justus Collins, C. F. Harwood, J. B. John, Superior, O. United Kansas Portland Cement Co., Chicago, Ill.; Edward M. Hagar, Morris Metcalf, Frederick Blanchard, B. F. Affleck, B. H. Rader, Pittsburg.

Virginia Portland Cement Co., New York; R. W. Kelley, Daniel E. Rianhard, W. R. Warren.

Vulcanite Portland Cement Co., Philadelphia, Pa.; John B. Lober, W. D. Lober, W. B. Dunn, S. W. Hartwell, Phillipsburg; Albert Moyer, T. G. Barr, New York.

Western Portland Cement Co., Milwaukee, Wis.; George S. Bartiett, C. B. McVey, Yankton, S. D.

W. G. Hartranft Co., Philadelphia, Pa.; H. M. Fetter.

Whiteball Portland Cement Co., Philadelphia, Pa.; Thos. M. Righter, W. C. Kent, Howard B. Green, H. S. Sny-

Whitehall Portland Cement Co., Philadelphia, Pa.; H. M. Fetter, Whitehall Portland Cement Co., Philadelphia, Pa.; Thos. M. Righter, W. C. Kent, Howard B. Green, H. S. Snyder, A. R. Frey, Cementon.

Percy H. Wilson, Land Title building, Philadelphia, Pa., secretary of the association.

secretary of the association.

Mingling with the members of the association there were: H. F. Kimble, Kent Mill Co., New York; Thomas Fuller, W. F. Hall and H. G. Barnhurst, of the Fuller-Lehigh Mill: J. Maxwell Carrere, Blanc Stainless Cement Co., Allentown, Pa.; George S. Emerick, F. W. Staley & Co., Philadelphia, Pa.; W. D. Phillps, Bradley Pulverizer Co., New York; Charles A. Matcham, Fuller Engineering Co., Allentown, Pa.; Charles M. Lauritzen, Raymond Bros. Impact Pulverizer Co., Chicago; H. A. Johann, Taylor Iron and Steel Co., High Bridge, N. J. T. M. Magiff, Atlas Portland Cement Co., New York; A. M. Bates, Bates Valve Bag Co., Cleveland, O.; Earl C. Bottomly, George-Sherrard Co., Wellsburg, W. Va.; R. C. Patterson, Union Portland Cement Co., Kansas City, Mo.; Richard L. Humphrey, Philadelphia; F. C. Balley, Atlas Portland Cement Co., New York.

There were theatre parties without number and

Atlas Portland Cement Co., New York.

There were theatre parties without number and many little talk fests in the lobby of the hotel and in the cafe, where the utmost good fellowship prevailed, showing that the producing end of the great American Portland cement industry is on the best of terms as far as its personnel is concerned, and the gist of the whole great convention at New York can mean nothing less than that the mighty interests of the cement producers will be found coöperating for the improvement of the building material interests of the country in the coming year. the country in the coming year.

Sales Managers' Meeting.

The Sales Managers' Branch held their regular annual meeting on Tuesday, December 8, and the chiefs of the sales departments of the companies, represented at the meeting, discussed the outlook and formulated plans for advancing the sale and shipment of cement along new lines, in which the readers of Rock Propulers are familiar namels, the propulers ROCK PRODUCTS are familiar, namely, the promotion of the use of cement in the construction of streets and roads and schoolhouses and other public buildings where the fire resisting properties of concrete construction are most important. The great question

of disseminating literature of an educational character for the use of the general public was considered and discussed at length. The annual election resulted as follows:

President—Albert Moyer (Vulcanite), New York. Vice-President—J. U. C. McDaniel (Chicago), Chi-

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Secretary and Treasurer—Charles L. Johnson (Castalia), Castalia, Ohio. talia), Castalia, Ohio.

Executive Committee—B. F. Affleck (Universal), Chicago; B. E. Allison (United Kansas), Kansas City, Mo.; P. H. Beery (Sandusky), Sandusky, Ohio; W. P. Corbett (Alsen's), New York; Howard B. Green (Whitehall), Philadelphia; R. E. Griffith (American), Philadelphia; W. G. Hartranft (Old Dominion), Philadelphia; C. B. McVay (Western), Yankton, S. D.; E. R. Stapleton (Iola), Kansas City, Mo.; J. F. Twamley (Coplay), Philadelphia; C. H. Wood (Wolverine), Chicago.

The Sales Managers' Branch, made up of the menon the firing line, are alive to the importance of control of the contro

on the firing line, are alive to the importance of co-operation, and work together like well-trained steeds in the association harness. As they are the men next to the shipments, they are first to feel the pressure in times of depression and the first to realize the improvement of business conditions. Their work is in times of depression and the first to realize the improvement of business conditions. Their work is principally the sustaining of the old-established uses of cement and after that reaching out into new fields with their circle of influence, so as to broaden the distribution and prevent in so far as possible unexpected or needless contractions in the general volume of the demand for their indispensable product.

The sales managers of the plants of the great Lehigh Valley met with those representing the plants of the Middle West and Kansas fields and all agreed that next year's business will be along better lines with a strong feeling of confidence in the carnest of prosperity, which has already appeared in the closing months of the dying year.

Kansas City Portland Cement Company Changes Hands.

The recent purchase by the cement department of the Union Sand Company, St. Louis, of the controlling interest in the Kansas City Portland Cement Company, Kansas City, increases their cement production largely. As A. H. Craney, the president, puts it, "We are on the eve of the most prosperous era of the total largery. As A. H. Craney, the president, puts it, "We are on the eve of the most prosperous era of our history. We are making our plans to put Kansas City Portland on a larger basis, as well as gain the efficiency which Manager H. Struckman has at the St. Louis plant. We are adding a Marion steam shovel and such trackage as will reduce the cost of getting out our rock. We have doubled our power plant by putting in Westinghouse turbines. F. L. Smith & Co. are putting in machinery to double our grinding, both for raw and finished products. The management of the Kansas City plant will be under E. Struckman, a brother of the general manager. The sales department will be handled the same way as the St. Louis plant, with the exception that Mr. Baumgardner will be assistant general sales agent, with offices in the Long Building, Kansas City. We have also put in a traffic man, and are further adding to the force to give us the greatest possible efficiency."

Referring to business conditions, Mr. Craney states that with the irrigation work, as well as perhaps the largest consumption of railroad material, it means that 1909 will be a busy year.

A Pioneer Portland Cement Plant.

No history of the Portland cement industry in this country could be properly prepared without referring to the pioneer enterprises. The plant of the Cobb Lime Company, of Rockland, Me., of which a picture is given in this issue, was among the earliest plants constructed. We are also able to give some interesting particulars, both with regard to the plant and the forces employed at that time in the manufacture of Portland coment. Portland cement.

The works were built in the summer of 1879 and included two mills for grinding the material, which was then reduced to a plastic state, the ovens and drying floor to convert the materials to a sufficient

drying floor to convert the materials to a sufficient degree of hardness before being ready for transfer to the kilns, the kilns for burning the material, the mill for grinding the same, together with the necessary sheds for the barreling and shipping department. The cement was manufactured of limestone and clay, and both of these raw materials were found to be suitable as to quality. The banks against which the works were located were composed of this material, below the surface layer of loam. In the process of manufacture the clay and limestone were ground together and conveyed to tanks, from which the mixture flowed in a plastic state upon the drying floor. The surface of the drying platform was composed of firebrick or tile resting upon brick flues, through which the heat of the oven circulated. Here the material was held until the moisture had been eliminated, terial was held until the moisture had been eliminated, after which it was cut up into briquettes and then run to the kilns, where it was burned with coke in

alternate layers. After the cement came from the kilns it was ground, sifted and barreled and was then ready to be marketed.

The coke used was principally obtained from the

The coke used was principally obtained from the coal used in the ovens, thus securing economy in the use of material, though a cargo of coke was imported from England. The limestone used was partly supplied in the form of "chips" from neighboring quarries, thus utilizing a material regarded as waste and an incumbrance in the work of quarrying stone for the manufacture of lime.

The process employed proved, however, to be too expensive, and plants built subsequently were equipped with more modern machinery, and after running a few years the manufacture of Portland cement at the plant was abandoned. The Cobb Lime Company, during the time they were engaged in making cement, marketed it principally in New England, though some of their brand was shipped west as far as St. Louis.

Chicago Retrospect.

To review the local Portland cement industry for the past year one must view the situation and con-sider the conditions that have prevailed from several sider the conditions that have prevailed from several standpoints. The volume disposed of has undoubtedly been large. Construction has been great and the amount of business done must be acknowledge good. Generally, when it is acknowledged that business has been good, enough has been said and contentment prevails. But 1908 has been a peculiar year. Its possibilities have been enormous and it is this phase of the situation that causes the cement manufacturers to feel that possibly they failed to obtain all the results they should.



CEMENT KILNS BUILT IN 1879 BY THE COBB LIME COMPANY, ROCKLAND, ME.

Never has there been such a constant demand. Big jobs were numerous and construction, construction was the cry that was heard from one end of our country to the other. This is one phase, and it certainly is a good one, the best one. With all this demand one might have thought that prices would advance, but the contrary was the fact. Prices fell immediately after the panic and no matter how great the demand, could not be reinstated. Then the situation did not seem to be comprehended at first. Each manufacturer tried to secure all the contracts possible, while price appeared not to be considered. A ble, while price appeared not to be considered. A cutthroat market then existed for some time and no one could understand exactly where he stood; a very unsatisfactory situation. The demand still continued, although the railroads failed to take the quota expected of them, and it was apparently this fact that caused apprehension in regard to the market, which caused apprehension in regard to the market, which now is seen to have been entirely useless. More might have been made out of these conditions, but the total result has been more than satisfactory, and comparing this year with last, it seems to be the consensus of opinion that 1908 is equally as good, if not better, than 1907. Undoubtedly the volume sold has been larger and in most instances the value has been as great, while in some cases both the volume sold and amount obtained has been greater in 1908, than in mount obtained has been greater in 1908 than in

Conditions now are improving every day. The railroads are making inquiries from the different manufacturers, and a better spirit seems to exist. The general tone of the market is firmer, steadier, and the new year will not be very old before an advance in price may be expected.

CHICAGO, ILL., Dec. 21.—The Chicago Portland Cement Company, whose offices are at 108 La Salle Street (Stock Exchange Building), speaking through

J. U. C. McDaniels, states that the year just coming to a close has been a good one for them. They increased their output almost twofold and yet their stock on hand is none too excessive. Mr. McDaniels says that more cement was consumed in this section during 1908 than was ever used before and that the demand has been steadily increasing each year. He calls especial attention to the great quantities that are being used by the farmers and predicts that eventually they will become the largest consumers of cement. They did an excellent business all during the month of November, but at the present time trade is exceedingly dull and they are quietly waiting for next year to develop the situation. December is always a quiet month. They are well satisfied with the quantity of their AA disposed of during the year, which was considerably more than the preceding year. Prices were not what they should have been, but the Chicago Portland Cement Company make no complaint. Their capacity, at the present time, is 1,000,000 barrels per year, but Mr. McDaniels says that they will exceed this amount in 1909.

In regard to future prospects, they are more than anguine. They predict that next year will be a prosperous one and are confident that much better conditions will prevail than has existed during 1908. conditions will prevail than has existed during 1908. They are not quoting prices for any large quantitiesfor future delivery and are not anxious to close any
large contracts at present figures, except for immediate delivery. They are much interested in the farmertrade and will shortly issue a pamphlet on "Uses of
Cement on the Farm." Mr. McDaniels states that
the Association of American Portland Cement Manufacturers is doing good work along this line, and asthey regard this as a large field for future work, they
are desirous of making their brand known to them.
The merit of Chicago AA is acknowledged by all whoare familiar with it. are familiar with it.

The Universal Portland Cement Company, Commercial National Bank Building, states through J. P. Beck that the market at the present time is quiet, but that a number of the railroads and larger corporations are sending out inquiries in regard to large-quantities of cement, in order to feel the market; but as yet very little buying is being done. Mr. Beck looks for a sharp advance in price in the near future and is confident that the demand will simply be enormous during the coming year.

Speaking of the quantity sold by them in 1908, Mr.

mous during the coming year.

Speaking of the quantity sold by them in 1908, Mr. Beck says that the Universal disposed of more cement during that period than they ever did before in any one year; that they sold almost three times as much in 1908 as they did in 1907, and hence they regard this year as a magnificent one. Prices were cut, to be sure, but although profits were small, the amount disposed of was so great they could make no complaint. December, as usual, is quiet, but, as Mr. Beck expressed it, they are resting serenely on their oars, waiting for the starting gun.

The Universal Portland Cement, Company expects

The Universal Portland Cement Company expect good conditions to prevail all during 1909. They think that the demand will be enormous and predict that the coming year will be a prosperous one for all engaged in the business.

Clinkers From the Mills.

Construction of the plant of the West Coast Portland Cement Company will begin shortly. It is to be erected at Lime Point, Idaho.

The Burt Portland Cement Company at Bellevue, Mich., will build an addition to their plant. The additional building will be 176x72 feet.

John A. Cruikshank, one of the organizers of the Continental Cement Company, of St. Louis, with general offices in the Syndicate Trust Building, died recently at his home in Waterloo, Ia. Mr. Cruikshank was one of the pioneers in the cement industry in the West. Many years ago, ac organized the Union Portland Cement Company of Rushsylvania, O., and was its president. He also established the Indian Portland Cement Company of Neodesha, Kan., the Mason City Portland Cement Company of Mason City, Ia, and later the Continental Cement Company of St. Louis, canitalized at \$3.500,000. Louis, capitalized at \$3,500,000.

The San Antonio Portland Cement Company, of San Antonio, Tex., has been incorporated for \$200,000. The incorporators are: Charles Baumberger, Albert Kronkasky and F. N. Cook, Jr.

The Bushkill Portland Cement Company, of Jersey City, N. J., has been incorporated for \$300,000. The incorporators are: G. A. Larmann and W. H. Rees, of Jersey City, and J. N. Hauck, of Stroudsburg, Pa.

The Robert Wetherill Company, Chester, Pa., have contracts for the construction and installing of machinery in a plant that the Allentown Portland Cement Company will build at Evansville, Pa. The Allentown company will build another plant at Allentown after the Evansville plant is in operation.



IOWA CRUSHER MEN MEET.

CEDAR RAPIDS, IOWA, Dec. 7.—The second annual convention of the Iowa State Quarrymen's Association was held at the Montrose Hotel in this city. President J. W. Burroughs, of Marshalltown, presided, and Frank Erickson, of Cedar Rapids, was in the secretary's chair.

President Burroughs' opening address was as follows:

Since our last meeting we have passed through a financial depression and the effects of it are still being felt, but the presidential election being over and prosperity having been promised by the advance agent, it is hoped and generally believed it will come, by all, except those who got stung. We happen to be one of that number and must confess the prosperity wagon has not arrived at our place yet, but when it does we shall jump right up into a front seat and be with you in getting our share. We suppose there is no doubt about it coming, so in the meantime we shall put our quarry in the very best of shape for a larger output, and, if possible, at a greatly reduced cost.

One of the bad features of the panic was to sharpen the competition and prices were cut to a very low point in many parts of the state. This, of course, did not continue, for as soon as the good crops were fully assured prices were much better.

In spite of all the drawbacks that may come there is little doubt but what the crushed stone business will be better and the demand larger in the next ten years than it has been in the past ten. We are in hopes it will be more profitable.

We arrived at this conclusion after reading the report

it has been in the pass of the follows:

We arrived at this conclusion after reading the report on the stone industry for 1907, made by the Department of the Interior, U. S. Geological Survey, from which we counte as follows:

on the stone industry for 1907, made by the Department of the Interior, U. S. Geological Survey, from which we quote as follows:

"Notwithstanding the fact that the financial and trade conditions the last half of 1907 caused a break in building operations and so materially affected the output of building stone that it decreased in value \$4,005.814, there was a decided increase of \$4,727,011 in the total value of the stone output, the principal increase being in the value of crushed stone, which gained \$4,586,811 in 1907 as compared with 1906. Building stone, however, has been affected, not only by the financial depression, but by the use of concrete, in which quantities of crushed stone are consumed. Also, heavy building stone for foundations and for the construction of walls, bridges, etc., has been to some extent replaced by concrete. Thus the loss in one branch of the stone industry has helped to keep up the demand in another.

"The crushed stone industry has shown a remarkable increase in the past decade. The demand for this kind of stone was first established by the demand for good roads, especially in the New England and Middle Atlantic states, and the industry has steadily grown, developing various different uses for this stone as well as increasing in quantity and value. In 1897 the crushed stone reported was chiefly trap rock from New York and New Jersey, some granite and a smhll quantity of limestone. The value of crushed granite and trap rock at that time did not equal \$1,000,000 and the limestone was not reported separately from the stone sold for railroad ballast. In 1898 the crushed stone no sold for railroad ballast. In 1898 the crushed stone output, including purposes. The crushed stone was all used for road making, but probably included some stone sold for railroad ballast. In 1898 the crushed stone output, including purposes. The crushed stone was all used for road making, but probably included some stone sold for railroad ballast. In 1898 the crushed stone output, including purposes. The crus

showing an increase over 1898 of \$18,022,852. This makes the value for 1907 5.47 times as large as that for 1898.

"The following states, New York, Illinois, Pennsylvania, Ohio, California, Missouri and New Jersey, in 1907 each had an output of crushed stone valued at more than \$1,000.000, while Iowa's crushed stone output for the same year was valued at only \$266,070."

For many years a little crusher was put in a quarry for merely cleaning-up purposes. There was not much crushed stone used because cement was so high, but that is all changed and today we stand at the dawn of a concrete age. Crushers are now put into all quarries for the special purpose of crushing stone in large quantities, and many quarries that heretofore used to ship hundreds of cars of rubble and footing stone now do not ship a single car. This great change has been brought about by the many cement plants that have been erected in the last few years throughout the country, the result of which has been to put cement on the market at a reasonable price. Most all of our railroads have abandoned, to a large extent, the old method of putting in heavy cut stone masonry and adopted the new and upto-date way of concrete for all bridge plers, culverts and foundations. It will only be a short while before they will build all their depots of reinforced concrete, and fence their right of way with reinforced concrete posts. A good concrete post can be made and put on the market at a very reasonable price—in fact it is being done today.

posts. A good concrete post can be made and put on the market at a very reasonable price—In fact it is being done today.

The farmers of our country begin to see they cannot afford to use wooden fence posts any longer and are already purchasing posts made of concrete. The concrete fence post has passed the experimental stage and has come to stay. A good reinforced post can be made and sold, at a fair profit, for forty-five cents. There are thousands of them in use now in this state and there will soon be millions more. The ordinary cedar post sold by our lumbermen will in the near future be compelled to take second place. They are getting higher.

For many years with some of our quarrymen the question of what to do with the screenings has been a serious one, and to you who have been giving them away let us say we believe they could be used up in making fence posts, and we are going to make some next season, using one part Portland cement, three parts sand and four parts screenings. They will be made 6x6 at the bottom, gapering to 4½x4½ at the top and seven feet long. We

believe this mixture reinforced with four iron rods will make a post that will last forever, and answer for every ordinary purpose on the farm.

Many of you were glad to give your screenings away because you had to handle them, and that cost money. We believe that time has about passed if you care to enter into this new industry.

Two years ago we induced one of our customers to build a large platform to put his material on, such as sand, crushed and rubble stone. We gave him several cars of our screenings and he built a platform that holds about six carloads. It proved to be a grand success and where he used to lose dollars, today he does not lose a cent. He was doing like nearly all do, when a carload of material came in it was thrown off on the ground if he could not load it on a wagon and haul it direct to some job. It costs more to load material from off the ground into a wagon than it does off a good smooth platform, besides if the material happened to be sand or crushed stone he lost a part of it; but today with him that has all been changed. He keeps stock on hand, especially screenings, and retails them at the standard price of \$1 per ton. It is to our interest to educate our customers along this line, and we find it does not take a live, progressive fellow long to catch on. Now don't think for a moment we are dictating what you shall do. No, far from it. We simply show what has been done and can be done if you care to do it. You don't have to make the most of your opportunities unless you want to. If you would rather give away your labor than get something for it, it is your privilege to do so.

Not only will the wooden post be a thing of the past, but the wooden culvert and bridge will be also. Nearly every board of supervisors in every county in this state can be induced to build culverts and bridges of reinforced concrete, and we desire to call your attention to one thing we believer will greatly benefit every member of this association. That is the matter of advertising.

We are firm believers in

Every bridge and culvert upon our public roads should from now on be built of reinforced concrete. It might be well for us to get up a well-printed and nicely illustrated booklet, either individually or collectively, showing some of those that have been built in this state, and their cost.

We could then go before a board of supervisors, if we so desired, with something tangible. Show them that it is felly to buy lumber for culverts and bridges, as has been the custom in the past, and induce them to put in permanent concrete work. Steel bridges are short lived things compared with those built of reinforced concrete, and just as soon as this becomes generally known by the gentlemen composing our boards of supervisors the steel bridges will go down and out. The object of the booklet should be to set forth the great advantages of concrete construction in every line and particular instances in which it can be used, so that the demand may be increased, and by educating the people to use two tons of crushed stone where only one is now used, everyone will get his proportion of the increase and in that way be proportionately benefited.

As to getting this booklet before the people, that would be a very small matter. There is a firm who furnishes the names and correct postoffice address of every farmer in every county in this state, and it only costs a few tollars to get a perfectly reliable list. This is only a suggestion and you can think it over.

At our last meeting, the question as to which road should furnish cars for joint rate business when a shipment was to be made over two or more roads came up d was discussed. Some of us had considerable trouble to get cars for such shipments, and it was thought best to bring the matter up before the Board of Railroad Commissioners. The question was laid before them with the request that all railroads in the state be notified so that those who cared to attend, could do so.

We are glad to say it was settled without a hearing, and the Board of Railway Commissioners and switchi

they were laboring under, and soon realize the fact that this is the only organization in existence where its members do one another and at times make prices far below the average cost of production. The fact is, in many parts of this state, stone is being sold cheaper than ever before and every quarryman is paying more for everything he consumes. Some people think this quarry business is a snap. That it is an easy matter to produce stone, and it makes no difference what price you quote them. They look upon it as the result of a combination and groan under the outrageous price they are compelled to pay. To all such we extend a warm invitation to enter the quarry business and join this association at once. They can rest assured that every member will extend the glad hand with a royal welcome and our obliging secretary will enjoy the most happy moment of his long life when he issues them a certificate of membership. They will undoubtedly be surprised to find that the sixth clause of our declaration of principles reads as follows: "We recognize the right of all quarry owners to sell stone to whatever purchaser, at whatever price, and whatever terms they may see fit."

It may be asked, if that is so what is the object of the association? That can always be found by turning to section (1) one, article (2) two of our constitution, which reads as follows: "The object of this association is and shall be to secure and disseminate to its members all legal and proper information which may be of interest or value to any member or members thereof in his or their business of quarrying and producing stone. To bring together its members in social and business meetings for interchange of ideas, thereby alding in the upbuilding of the business and protecting one another from irresponsible persons."

No, this association is not a combination in restraint of trade. It has higher and greater objects in view.

The time bas arrived when most of the quarries will close down for the season and make needed repairs between now and next s

Year.

The suggestion of the president to have a booklet printed was adopted. It was decided to have about 15,000 copies printed and distributed among the farmers and people of the state, each crushing plant to bear its proportion of the expense.

The election of officers resulted in the same officers retaining their positions. They are: President, J. W. Burroughs, Marshalltown; vice-president, W. N. Dearborn, Stone City; secretary-treasurer, Frank Erickson, Cedar Rapids.

It was decided to hold the next meeting at Cedar

Rapids on the first Monday in December, 1909. It was also arranged to have a banquet at that meeting.

All the members present reported a successful business season in 1908 and look forward to a great era

of prosperity in the near future.

Crusher Plant at Marquette.

MARQUETTE, MICH, Dec. 20.—F. B. Spear & Sons write us that they are putting in a crushing plant just outside of this city. They are installing two Gates crushers and will have a capacity of 300 yards per day. They will crush trap rock and quartzite.

Resume Operations.

LOWELLVILLE, OHIO, Dec. 11.—The Mahoning Lime stone Company have resumed operations at their crusher after being idle for the past ten days, on account of making extensive improvements. They have plenty of orders but were obliged to suspend work until improvements and repairs could be made.

Fire Destroys Plant.

New Albany, Ind., Dec. S.—The stone-crushing plant of the Marengo Manufacturing Company, at Marengo, thirty miles west of this city, on the Southern Railway, was destroyed by fire today. The origin is unknown. Loss on building and machinery is about \$10,000, partly insured.

Iron Company to Operate Crusher.

POTTSTOWN, Dec. 15 .- The Warwick Iron and Steel Company, which acquired the interests and quarries of the Bassler Limestone Company, formerly operated by a number of Lebanonians and others, is in possession at Myerstown.

It is said the new concern has planned to improve the conditions of the property to the extent of \$30,000. Included in the improvements will be a boiler house and machinery, and other appliances necessary for the extensive quarrying of stone. The product is being shipped to this place.

New Incorporation.

The Muskogee Crushed Stone Company has been incorporated for \$15,000. The company will erect a stone-crushing plant near Fort Gibson. The officers of the company are: F. J. Sidener, president; Charles E. Suttle, secretary, and J. W. Hanson, treasurer.

IMMENSE CRUSHING PLANT.

The Brownell Improvement Company's Operations and Quarry at Thornton, Ill.

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On the Chicago Terminal Transfer and the Chicago On the Chicago Terminal Transfer and the Chicago and Eastern Illinois Railroads, at Thornton, Ill., is located the immense crushed stone plant and quarry of the Brownell Improvement Company, whose offices are in the Chamber of Commerce Building, Chicago. This quarry has been in continuous operation for twenty-one years and the enormous quantity of crushed stone that it has furnished to Chicago and its vicinity and the many railroads in the State of Illinois, is simply incalculable. About 50 per cent of their entire output is consumed by the railroads, the Brownell Improvement Company having been identified with this class of work for many years. They are field with this class of work for many years. They are one of the most extensive contractors in railroad construction in all the West and use annually about 400,000 cubic yards in this manner alone. The Chicago, Rock Island and Pacific Railway, the Lake Shore and Michigan Southern and many other rail-roads, for years have secured all their ballest from them. Their holdings cover more than 500 acres, all underlined with limestone, and core drillings have

Bucyrus, a forty-five-ton affair, known as No. 174 (of the Thompson type), and while it is now some-what antiquated in appearance, it is still capable of performing mighty good work. Both Gates and performing mighty good work. Both Gates and Austin screens are used, which separate the crushed rock into nine different sizes, the larger sizes being

rock into nine different sizes, the larger sizes being used for macadam and the smaller for concrete. The Chicago Terminal Transfer and the Chicago and Eastern Illinois Railroads have tracks on either side of their plant, with switches running directly under the storage bins, which are emptied into the cars by gravity. With these transportation facilities there is scarcely any section of the country within hundreds of miles that is not a natural tributary for them. Michigan, Indiana and Illinois can all be supplied at the lowest possible freight rate, and Mr. Hodgkins states that their business in these sections is increasing rapidly. Chicago nevertheless is their

Hodgkins states that their business in these sections is increasing rapidly. Chicago nevertheless is their principal market and consumes such great quantities of their product that they have not been able to give this outside territory the attention that it deserves.

Col. Jefferson Hodgkins, the president of the Brownell Improvement Company, is thoroughly acquainted with every detail connected with his business, and is truly a practical man in every sense of the word. He and the interests he represents have become so identified with construction work, more especially railroad construction, that when speaking

is water-slacked, a molecule of calcium oxid (CaO) unites with a molecule of water (H₂O), forming a molecule of calcium hydroxide (CaH₂O₂), whose molecular weight must be 74. When lime is thoroughly air-slacked, carbon dioxide is absorbed, water being given off, if present, and the final compound in air-slaked lime is calcium carbonate (CaCO₂), except the same expression of the carbonate of the carbonat

in air-slaked lime is calcium carbonate (CaCO₂), exactly the same compound as in limestone.

"From these facts, it will be seen that 100 pounds of pure limestone is equivalent to 56 pounds of pure water-slacked lime, and to 100 pounds of thoroughly air-slacked lime, provided none of the products contain any excess of water.

"University of Illinois."

THIRTY THOUSAND

Cubic Yards of Rock Thown Out With a Single Blast of Dynamite.

In our October issue we called attention to the John O'Laughlin Stone Company's big Racine crushed stone quarry and stated then that Mr. O'Laughlin intended to inaugurate a new system of drilling and blasting, a system by which great saving in expense could be accomplished. He contemplated drilling the whole depth of his quarry 110 feet, thirty-five feet from the face and forty feet apart, using one ton of dynamite in each of four borings. Keystone drills are to be used. He claimed that each charge would loosen 7,000 cubic yards and that over 30,000 cubic yards could thus be made ready for the crushing house with one blast.

These statements caused considerable discussion

These statements caused considerable discussion These statements caused considerable discussion among quarrymen, and many were the predictions of the dire results that would happen if Mr. O'Laughlin should carry out his scheme. Others claimed that the authorities would not permit such a blast to be let off. However, Mr. O'Laughlin went on with his preparations just the same. On December 1 he, acceptable by the leading sitting and the same of Pacing and off. However, Mr. O'Laughlin went on with his preparations just the same. On December 1 he, accompanied by the leading citizens of Racine and a number of the most prominent engineers and quarrymen from all over the country, among whom were Mr. Harcus, of Oklahoma City, owner of large quarries in Oklahoma; Mr. Wicks, general expert with the Du Pont Powder Company, of Fond du Lac, who had with him several other powder men; John Dolese, of Dolese & Shepard, Chicago, and Mr. Hammersmith, of Elmhurst, Ill., quarryman, repaired to the quarry, which is located at Ives, just outside the city of Racine. The test was made about 5 o'clock in the afternoon, and never was experiment more successful. Racine. The test was made about 5 o'clock in the afternoon, and never was experiment more successful, every calculation of Mr. O'Laughlin being fulfilled. Most of the spectators retreated to a great distance, fearful of what the consequences might be when four tons of dynamite were exploded at once, but Mr. O'Laughlin and his assistants had perfect faith in his new method and remained within fifty feet of the base of operations.

The immense charge was set off by electricity. With a rumble and a roar that could be heard for many miles the entire face of the quarry was blown out, the terrific force of the explosion seeking the natural path of least resistance tearing out the face of the quarry, the upheaval extending barely ten feet above the surface.

This had been carefully calculated by Mr. O'Laugh-lin. Thirty thousand cubic yards or more was at once ready for the crushers. No cleaning off of benches, no redrilling, no recharging was necessary, as from top to bottom the entire mass for thirty-five feet back was thrown to the quarry floor, all in one-fourth the time and at about 70 per cent less expense. Mr. O'Laughlin deserves the heartiest congratulations and most sincere thanks from all quarry men for demonstrating how to save time and money.



QUARRY AND CRUSHING PLANT OF BROWNELL IMPROVEMENT COMPANY, THORNTON, ILL.

been made to 2,100 feet. After twenty-one years' continued activity, the depth of the quarry is only about eighty-five feet and the supply can be truly said to be inexhaustible. Being only about twenty miles from Chicago, with its transportation facilities of the best, its ease of access, the short time required to deliver the product, not only to Chicago but all over the State, and the greatly increasing demand for crushed stone, a demand that is increasing in leaps and bounds each year, as the many uses to which such material can be put is constantly being learned, this

material can be put is constantly being learned, this property is indeed a valuable one.

Not many years ago, they opened up a new section in their quarry. This section is now twenty-six feet deep, with a face of 6,500 feet. It is of stratified lipse.

in their quarry. This section is now twenty-six feet deep, with a face of 6,500 feet. It is of stratified limestone and of the very best quality.

We give an illustration of one corner of this new section, from which one may form rather an accurate idea of its appearance. Drilling, as yet, is done to the entire depth of the quarry, and after blasting and loading the material into cars with their immense new Bucyrus, it is elevated by cable and hauled by locomotive to the crushing house, where it is automatically dumped into bins, each bin having a capacity of 1,000 cubic yards. They use nine crushers, five Gates, numbers 9, 8, 6, 5, 4, and four Austins, numbers 8, 6, 5, 4. All drilling is done by air, the Ingersoll-Rand Company's drills being used exclusively. A ninety-five-ton Bucyrus shovel, known as 1073, is used, and Mr. Hodgkins states that the work it performs is marvelous. While speaking of this shovel we might mention that Colonel Hodgkins is a pioneer in utilizing the possibilities of the steam shovel in excavation and quarry work, and while now he has many imitators, he holds the honor of being among the first to adopt the idea. Almost twenty years ago, Mr. Hodgkins says, he first introduced a

of this work one naturally thinks of Colonel Hodgkins or the Brownell Improvement Company.

An Inquiry From the Transvaal.

The Breeders' Gazette has had Professor C. G. Hokpins, of the University of Illinois, answer a question from Africa, and as it may interest the novice, we place it in the hands of the retailers to pass it along. We quote the question and the answer:
"To the Gazette: J. O. H., of the Transvaal, South Africa, makes the following inquiry:
"'In your issue of June 1, I read: "In power to correct acidity of soil 700 pounds of unslacked burned lime are equal to 1,250 pounds of ground limestone." Please say how many pounds of air-slacked lime would

Please say how many pounds of air-slacked lime would be equivalent to 700 pounds of unslacked lime and also how many pounds of water-slacked lime."

"The most satisfactory and at the same time the most simple answer to these questions is to state the

most simple answer to these questions is to state the atomic weights or combining weights of the chemical elements involved. These combining weights are 1 for hydrogen, 12 for carbon, 16 for oxygen and 40 for calcium. Pure limestone is calcium carbonate (the ending 'ate' usually suggests the presence of oxygen in chemical compounds). This compound has the formula CaCO₂ and thus contains in the molecule 1 atom of calcium, 1 atom of carbon and 3 atoms of oxygen, or 40 parts of carbon. oxygen, or 40 parts of calcium, 12 parts of carbon, and 48 parts of oxygen, the sum of which happens to be 100, which is a very rare occurrence for the molecular weight of a compound.
"When limestone is burned, carbon dioxide (CO₂)

when limestone is ourned, carbon that the form of a gas and quicklime or calcium oxid (CaO) remains, from which it is easily seen that 100 pounds of pure limestone will yield only 56 pounds of quicklime. When quicklime

Operate Three Quarries.

BALTIMORE, MD., Dec. 20 .- The Schwind Quarry Baltimore, Md., Dec. 20.—The Schwind Quarry Company operate three quarries in the eastern and western parts of the city. The stone is a gneiss formation and is suitable for curbing and foundation, but the principal part of the output is utilized for crushed stone. The equipment of the quarries consists of five Gates crushers, three No. 3 and one No. 4 and one No. 2. Mr. Schwind says that business during the past season has been very good and held upparticularly well until early in December. Nearly one-half of their output is used in street construction work, as Baltimore has been doing quite a large amount of this class of construction lately that has utilized a considerable quantity of crushed stone. There is a great deal of building contemplated for next season and this company will no doubt get its share of the business. share of the business.

SAND-LIME † † † † † † † BRICK †

STANDARD BRICK.

The National Body of Sand-Lime Brick Makers Take the Lead in Modern Progressiveness.

Washington, D. C., Dec. 16.—The fifth annual convention of the National Association of Manufacturers of Sand Lime Products has closed its continuous session of two days. H. O. Duerr of Wilmington, Del., presided and Fred K. Irvine of Rock Products, Chicago, recorded. The attendance represented one-half of the industry and one-half of the membership of the association. As a result of the deliberations, not only the sand-lime brick industry but the brick industry as a whole has set an example that will have of only the sand-lime brick industry but the brick industry as a whole has set an example that will have a very far-reaching influence in the direction of establishing standard specifications, which will in the future have to be met by all classes of building material in the shape of brick. Little or no progress in this direction has been made heretofore. Brick manufacturers have held aloof from the proposition of standardizing their materials. Every time such a suggestion has been made in the past the well-worn excuse that the brick business is a local proposition and that each locality must be content in specifications possible to it, which might or might not be applicable to other locations. to other locations.

Beginning early in the year just past and in pur-suance of resolutions passed at the annual convention held at Columbus, Ohio, one year ago, the national association acted in conjunction with the National Board of Fire Underwriters and have been laboring by the route of well accredited comparative tests of various kinds of brick to establish the beginning of the work looking to a practical standard

various kinds of brick to establish the beginning of the work looking to a practical standard.

A joint committee from the two above bodies several months ago drew up a set of recommendations for standard specifications, which would place any brick meeting these recommendations into favorable consideration for specification in any building operation. The recommendations were adopted at the convention, that here invited is consideration for the second consideration in the second consideration for specification in any building operation. nation. The recommendations were adopted at the convention that has just adjourned, and it may be remarked that this is the most important step any brick making organization has ever taken, because it sets in motion the machinery which will ultimately result in the intelligent and definite standardization of brick building materials, no matter of what special product they may be made. The signal importance of this work has already

been brought to the attention of the Bureau of Standards and to the Supervising Architects of the United States government, and this movement naturally meets with the approval of such building authorities.

The Opening Session.

The morning session, December 15, was taken up with the annual address of the president and the reports of the secretary, treasurer, and district representatives of the association. The reports, from the industry by districts, indicated the sand-lime brick industry to be in a very healthy condition and growing rapidly.

rapidly.

Those conditions which at first confronted the

Those conditions which at first confronted the manufacturers have to a great extent been dispelled by the route to practical experience in the business, and while in some localities there is still prejudice against the sand-lime brick, it has made good in every case where it is well made and honestly handled. There was much encouragement found in the reports from the fact that in spite of the universal depression of the last season that most of the manufacturers were able to operate their plants part of the time at least, and even in communities where the use of brick was curtailed to a great extent and sand-lime brick showed no falling off in the demand that has been created for it.

OBSERVATION OF THE PROGRESS OF THE INDUSTRY IN EUROPE.

BY JOHN L. JACKSON.

BY JOHN L. JACKSON.

Months before my trip, I corresponded with United States Consul General A. W. Thackara, at Berlin, in order to be put in touch with such parties as might be able to give me the desired information by correspondence, and save a lot of time and annoyance when ready to begin my investigation.

I did not go to Europe for the purpose of obtaining information pertaining to our industry: I went to get a much needed rest, see what chance there was for selling furniture, from two factories in which I am interested, look up the producer gas industry for power purposes in making gas from bituminous coal, the handling of waste from beet sugar factories, by pressing, drying and bag

ging so that the pulp can be sold to the consumer at some distance from the factories, which cannot be done with the wet pulp, and find what was being done regarding the use and manufacture of denatured alcohol from by-products, but I did not forget our industry, as I had my route laid out and did not lose any time by having to go over the same territory twice. I arrived at Berlin about the middle of March and spent some time at the United States Consul's office, getting letters of introduction to the parties I wished to call upon and to find the best and shortest way of reaching them. I then called at the headquarters of the Society of Lime Stone Factories, met their representative, who gave me some information, referred me to manufacturers of sandstone brick and gave me letters of introduction to those whom he thought could give me the information I was seeking.

I find that the industry is ateadlly growing, with a gain of over fifty factories in Germany during the year 1007, notwithstanding a strike which lasted almost during the entire building season and tied up all the work under way. Berlin has more than twenty factories for making sandstone brick, which can produce over three hundred million brick per year. One factory has a capacity of one and a half million per week with eighteen presses, and is said to be the largest sandstone brick plant in the world. Berlin uses over five hundred million brick per year, which are divided between the manufactures of clay and sandstone brick. It is not a question of quality, but a question of price delivered on the job. The delivered price varies from \$4.75\$ to \$6.50 per thousand and it costs from 75 cents to \$1.00 per thousand to deliver. The quality of the brick is very poor and would not be accepted in this country, but as all exposed parts are given a coat of cement to limitate stone work, it does not make any difference in this market, which is not the case in some of the other places I vishted, where the brick must have sharp corners and be perfect or they will



II. O. DUERR, WILMINGTON, DEL., THE RETIRING PRESIDENT.

making money, even at the prevailing low prices, and others were not running and did not intend doing so until the brick on hand were used up and prices were advanced. Some of the factories I visited, I believe, were doing well or even better than they represented, as the brick were taken direct from the factory every day. They had no brick on hand and were making about 100,000 per day, running day and night shifts. One of the managers showed me his daily and weekly cost sheet, also receipts for the brick sold, which netted their company a profit better than \$1.25 per thousand, after deducting overhead expense, depreciation, etc. They had an exceptionally well arranged plant with four presses and eight kettles or hardening cylinders, with a capacity of 100,000 or more each day of ten hours, but were running only two of the presses and all the kettles, day and night shifts, ten hours each, alternating the crews each week. The managers claimed they saved at least 25 cents per thousand on labor and as much more on fuel over running the entire plant day time only, and got more capacity, as the different crews were trying to make as good a showing as possible.

I will give you the cost of the brick from one of the plants located a short distance from Berlin. The German standard brick is larger than ours or the Philadelphia size, and contains about 40 per cent more material, and is about 50 per cent heavier.

ating expense or labor and cost of maintenance. One factory I visited near Berlin was making about 60,000 brick per day, twenty hours, with fitty-one to fifty-four men on their pay roll. Another factory in Berlin, making from 100,000 to 104,000 brick per day, twenty hours, had the same number of hands on their pay roll, and made a much better quality of brick. I also found a vast difference in the cost of repairs or maintenance in claimed that this item was less than 20 cents per thousand and others as high as \$1.60 per thousand. One plant in Berlin was changing its system and machinery on account of the excessive cost of maintenance or repair account. They claimed they had machinery enough to equip four factories and altogether too much to keep up. A plant I visited at Kiel on my second trip to Europe and again on this trip, had made such a success of their business that they were unable to supply the demand for brick, notwithstanding they had doubled their capacity. Another was just being installed. The owner of the first Kiel plant said his brick cost him, for factory expense, east has \$2.75 in 1905 and about \$2.75 in 1906. He figured his labor at \$1.10 to \$1.15 per day of ten hours. His cost includes all factory expense, such as labor, fuel, lime, repairs, taxes and expense in connection with the factory, but does not include office or sales expense. He was very well pleased with his business. Before taking it up he was a large contractor, at which time he did all he had to be a supplemental to the brick gred of the Hell, making from 100,000 to 104,000 brick per day with fifty-two to fifty-four men, had been in continuous operation over two years and had a system different from any I had seen on my previous trips. The sand, which was clean and of a fine texture, was taken into the factory from the bank or pit in dump care holding about one and one-haif yards each; the lime was ground and stored in an airtight metal tank about 7 feet in diameter, 12 feet high, towards and hydrated as it was being mixed in th

hoisted or run up on a lift and the brick unloaded from the cars as required.

I was well pleased with the treatment I received from the managers of the different plants I visited; in only one instance was I refused admittance, but succeeded in getting into the plant after getting the right combination. I feel that I was well repaid for the time and money spent and am glad I do not feel as a manufacturer of our industry here, that the "Dutchman" cannot teach us Americans anything new. I would advise any member of our association to take a trip and spend the time to investigate, and I assure him he will not regret doing so. I have copies of tests made, with mortars on clay and sand-lime brick, at the Royal Testing Station of the School of Technology in Berlin, which I have translated and have with me. I believe it would be a good plan to have some of these printed and distributed to the members of our association, to give or show to masons, contractors and architects who object to the use of our brick on account of the mortar not adhering to them as to clay brick.

Before closing I would like to call the attention of the members of our association to the condition of our sister association in Germany. They have elected their officers from representatives of machinery companies and engineers who represent one particular kind of machinery and system, which is causing a great dead of dissatisfaction and a number of withdrawais from their association. There is some talk of organizing another association. There is some talk of organizing another association. There is and machinery. We are organized for our mutual protection and I believe we should work together.

This paper was discussed at length by Messrs. Buck, Kwiatkowski. Penfield. Skeale Lowershal and

This paper was discussed at length by Messrs. Buck, Kwiatkowski, Penfield, Skeele Lowenthal and

Mr. Jackson said that the German manufacturers and no pretense of making a high quality brick for the reason that in every case their brick work is covered up by a cement plaster, and there is no special care taken in the making of the brick in Germany to get good edges and corners or to preserve the uniform color.

Mr. Kwiatkowski insisted that the American manufacturers had long outstripped the German manufacturers in that they are making a better brick in this

country than they are in Germany and his study has been entirely in the line of producing the very highest grade of face brick.

Mr. Buck was not inclined to believe that the Ger-

man operators could frame any comparative lesson for the American manufacturers, because the labor cost, cost of material, and the selling price, building con-ditions of ordinances and restrictions are in no way

Mr. Berg remarked that in the early days of the sand-lime brick business the tendency to copy after and follow the German ideas had been the first great drawback to the business, and now that we have overcome these difficulties he believes that the Ameran and Canadian manufacturers are making better rick than ever have been, or could be made in

The next paper was a practical one that appeals to the manufacturer who has had experience in the manufacture of sand-lime brick.

EXPERIENCE-WHAT HAS IT TAUGHT US:

By W. J. CARMICHAEL.

Patrick Henry once said, "I have but one lamp by which my feet are guided and that is the lamp of experience".

To most men experience is the guiding star which forges them into successful combat with difficulties encountered and through it have come the masterpieces of art, the discoveries of science, and the present day success of the properly equipped sand-lime brick factory.

Some years ago Dr. Michaells of Germany, through the properly equipped sand-lime brick factory.

Some years ago Dr. Michaells of Germany, through the properly equipped sand from the properly equipped sand-lime brick nade to expire, thus giving the piublic every right to its use. Som after the new system of brick manufacture became known, a number of patents bearing directly or indirectly upon the sand-lime brick industry were granted, but few the property of the property of

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problems as it was gradually developed. When the auger machine was invented and placed in operation troubles of lamination, warping and checking were encountered and it became necessary to readjust the machines and augers to overcome these very objectionable features.

It has taken years of hard work and an expenditure of immense sums of money to bring about the present day perfected stiff mud brick. We talk of disintegration, and I cannot help but believe that the up-to-date methods of testing materials have been the outgrowth of experience gained through the disintegration and scaling on the market of underburned and improperly made clay brick. Hence, we must conclude that again the materials were not so much at fault as the lack of experience on the part of the operator.

After the different clay processes have been successfully carried on to the complete satisfaction of architects, contractors, the government and all classes of people, then a dry press process of manufacture in which ground clay containing but a small percentage of moisture was pressed in brick form by a machine designed to exert sufficient pressure to bond together the particles of ground or pulverized clay. Much skepticism was immediately aroused regarding the possibility of its weathering without disintegration owing to the manner in which it was made and because it was not first pugged to the consistency of mud. However, with the aid of the machinery manufacturer and the experience gained by actual practice, dry press brick today ranks with the best of building materials both in durability and beauty of finish.

In the earlier stages of brick making it was practically unknown to manufacture brick from the different shales deposited throughout the country, yet today experience has taught us that shales are most excellent for the production of all building materials. They are also suitable to enter into the manufacture of by far the best street paving blocks known. Knowing therefore as we do the advances made in the brick industry we are



E. W. LAZELL, PH. D., OFFICIAL ASSOCIATION

whether manufactured by the dry press, stiff mud, soft mud or other processes now in general use. The result would be a benefit to all parties interested, especially at this time when-our friendly competitor, the cement manufacturer, terms this "The Cement Age."

We should jointly face the problem of economizing, especially in the placing of brick in the wall, the adjustment of differences between the contractor and the brick layer and the possibility of bringing to the notice of the brick laying fraternity the necessity of regulation to meet the open competition of reinforced concrete and other building materials. True, there is some agitation already started and investigation is being made tending to the economy and speed of the building of brick work, but what we need most is the intelligent, fair-minded mechanic who can and will do a day's work without having a chip on his shoulder and who is not affaid to encourage the apprentice in his class of work. The brick layer of today is beginning to face a position which he himself has brought about; for instance, the architect, contractor and builder, when faced with what they consider unjust regulation, have only to advise the brick layer that unless his proposition is given more consideration the structure will go up as a reinforced concrete building. It behooves us then to consider our relation with the man on the wall and his connection with buffers and architects, whose interests are so closely allied to our own.

ers and architects, whose interests are so closely after to our own.

The manufacture of sand-lime brick has often been viewed as a strictly face brick proposition, owing, perhaps, to the nicety of its appearance, the perfection of samples submitted and from the fact that many of the early organized companies were burdened by overcapitalization and by heavy expenditures made necessary in overcoming the difficulty encountered in perfecting its product. The attractiveness of marketing the product at face brick prices was also an item. Some of our manufacturers have even gone so far as to state that past experiences show conclusively that common sand-lime brick cannot be made in competition with clay

brick. These statements, however sincerely and honestly made, were formed, no doubt, upon a basis of expenditure of large capital for a factory of small capacity. We must admit that a plant built under such conditions cannot compete with an economically managed clay brick factory of large capacity, but I contend that a factory constructed along labor saving lines and equipped with garnot only compete with other maning of a large capacity cannot only compete with other manufacturers of common brick but can produce a more wanufacturers of common brick but can produce a more even product at the same figure, if not materially less in cost. Some of you will, I am sure, bear me out in my statement that if your factory had been equipped with the proper machinery and had fulfilled the promises of the promoter as to the average capacity it would produce and had not been found incapable of a practical continuous operation, you would today be in a position to dictare the policy of your local market. Isn't it true that your real troubles have been brought about by breakdowns of lightweight machinery and the losses caused in this manner rather than by any skepticism as to the real merit of your product? As you have faith in your proposition and have quipped your factory at the expense of thousands of dollars, why not guarantee your product to the purchaser in such a manner that he cannot question its durability? You will not be required to furnish this guarantee long after you have introduced your brick, and if you should, you carry no risk if the manufacture of your products of the past as compared with the disintegration of the sand-lime brick product? My general observation has been favorable to the average care in its making:

This brings us to the consideration of a standard for our product, not only as face brick but always.

ime products, not only in atmospheric conditions, but in cases of fire. A just comparison should tend to show us making.

This brings us to the consideration of a standard for our product, not only as face brick but also common brick, which will receive more attention from the manufacturer in the fure than it has in the past. If we, as an association, can bring about a standard regulation of our products we not only firmly establish our industry but place about it also only firmly establish our industry but place about it also control to the furnitude of the past of the permanent growth. The manufacture of sand-line brick has developed to rapidly and so many different designs of machinery and apidly and so many different designs of machinery and apidly and so many different designs of machinery and spidly and so many different designs of machinery and spidly and so many different designs of machinery and spidly and so many different designs of machinery and spidly and so many different designs of machinery and spidly and so many different designs of machinery and spidly and so many different designs of machinery and spidly and so many different designs of machinery and spidly and so many different designs of machinery and spidly and so many different designs of machinery and spidly and so many different designs of machinery and spidly and so many different designs of machinery for the sand which some good may result. We have count first but the considered, for this location for understand the spidly and so many different designs and so the spidly and so the proper selection of a location for the factory must be considered, for this location must not only be within a certain radius of proper shipping facilities to market points, but must contain sufficient in the first part of the same radius. One should first but on a competitive basis with other materials which with the same can be separated and the screening made remunerative, what necessary expense is connected thrown off by the screen. A screening test of t

nas received proper stuenton, and the class of material for which it has been constructed to handle has been furnished.

The writer was surprised recently to note an article written in favor of a method of manufacturing sand-lime brick in which the use of moisture in the material was recommended while being ground in a tubemill, this article further stating that where sufficient moisture in the natural sand is not sufficient a jet of steam is turned into the mill. This is the first recommendation of this character I have come in contact with, as my experience has been to operate tubemills with as nearly a dry material as is obtainable, owing to the tendency of the mill to clog when operating on damp materials. I will appreciate any information which may be brought out in the discussion of this point.

The dividing of the sand so that a portion is ground with the lime, while the remainder is carried over the machines to be finally mixed with the ground sand and lime, is now being used extensively. In some cases the ground material is placed in the silo where complete hydration takes place, the unground sand being afferwards mixed with it as the material moves forward to the press. In others, the entire mixture of ground material with unground sand is placed in the silo until the entire mass is ready for the press. These two methods deserve our attention and can be installed in any factory with little expense for equipment. The grinding of all materials will produce an excellent brick, but at an

added cost, while the finished product will not be superior in any way to the former method. The use of hydrate of lime produced either by steam or natural water hydration can be used by the different methods mentioned, and where magnesia is found in the lime hydrate it is a most positive method of reducing the liability of expansion or bursting of the brick.

However, where real economy and a high grade product are required, the preliminary mixing of sand, ground sand and high calcium lime placed in the sile is by far more preferable than the placing together of hydrated lime under the same conditions.

The men who know and who are demanding high class goods realize that there is more in the way brick are produced than was at first supposed. They also realize that there have in the way brick are produced than was at first supposed. They also realize that the American does not take kindly to the plastering of brick work and covering up of defects in brick construction, as is carried on in foreign countries. Hence, we must keep to some standard which will reach the demands of the architect for a completed wail. We should not favor the throwing together of crude materials without some method of determining positively the amount of sand and lime used, nor should we be satisfied to make brick with lime spots showing in abundance, nor with swollen brick produced by a mixture of unhydrated particles of lime with the sand. It is easily possible for all to produce an excellent article by glving the proper care to the details around the factory.

Experience in all lines of manufacture has proven it conomical and good practice to keep all machinery in first-class condition for the work required of it. Don't let your machinery be neglected, but keep up the repairs, watch the liners of the press, whether rotary or vertical, for they will give you good service if properly cared for.

watch the liners of the press, whether rotary or vertical, for they will give you good service if properly cared for.

The hardening of the product has been given much consideration, and it has been found advisable to carry steam pressure of at least 125 pounds per square inch, with preferably a pressure of 150 pounds for economy and safety, in the bonding of the material. The present day practice favors high pressure cylinders, thoroughly lagged and arranged for returning the condensation to the boiler or superheater.

The sorting and shading of the product should receive greater care, as we cannot hope to secure face brick prices for a conglomeration of all kinds of colors and classes of brick. Every face brick should receive the best of care in handling and shipping. Not one brick should leave the yard as a face brick unless it has been sorted and declared first-class in every respect. There should be a marked distinction in the different grades of brick, and only by this difference can we hope to keep prices right and keep in comfortable relationship with the architect, contractor and builder.

There are numerous details which I might have taken up tending to show the effects of different operations on materials. The coloring of sand-line brick and the workings of different machines in different conditions, but these no doubt will be talked over in the convention.

In conclusion, let me urge again upon you the necessity of a standard product, more care in the details of the preparation of materials, and the upkeep of factory equipment. Do these things and you will be surprised with what speed the sand-line brick and ustry will expand, for we have demonstrated the permanency of our product and are forcing our competitors to realize that it is a permanent, staple article and one which will take its place in the very front ranks among building material.

Mr. Carmichael is a charter member of the asso-intered who has never missed a meeting, and he has

Mr. Carmichael is a charter member of the asso ciation, who has never missed a meeting, and he has been in the forefront of the growth of the business from the beginning. He is connected with the American Clay Working Machinery Company, which concern has installed many of the successful plants now in operation, and Mr. Carmichael speaks particularly in reference to the experience of the ese plants as well many others which he has visited in his investigations.

The discussion of this paper was continued for some time, and the consensus of opinion was that Mr. Carmichael had well summed up the status of the

industry to date.

The balance of this session was taken up with an The balance of this session was taken up with an open discussion upon the subject of hydrated lime, the grinding of sand and lime together, the siloing of caustic lime for the purpose of hydrating it in connection with finely ground sand, coloring and the experience of those present in the matter of coloring brick. The "question box" was opened and all of the questions relating to the equipment, management, handling and using of sand-lime brick were thoroughly discussed. The mixing problem was taken up at length and in detail. Mr. Berg, of Toronto, exhibited a small model of his latest machine in the shape of a positive-feed mixing device, which was carefully examined by the members present. This, to carefully examined by the members present. This, to-gether with the preparation of the sand by drying, gether with the preparation of the sand by drying, has always been one of the practical questions of deepest interest. H. C. Shields, representing the Lehigh-Fuller mill, also exhibited a working model of that high-grade grinder for sand, which is extensively used by the brick makers. Many of those present stated, at the time of adjournment, that in this discretion, which was cover to all and freely entered into cussion, which was open to all and freely entered into by every man present, was worth many times over the entire cost of their attendance at the convention.

The Tests and Recommendation.

The second day found the routine business of the convention well provided for and the members on the qui vive of expectation with regard to the report and recommendations of the joint committee of the association and the National Board of Fire Underwriters. Ira Woolson of Columbia University, New who is eminent in the matter of standardizing build-ing materials, as the head of the testing laboratories for the municipality of greater New York, and E. W.

Lazell, Ph. D., of Philadelphia, were on hand to take technical side of the deliberations

At the direction of President Duerr, John L. Jackson, of Saginaw, Mich., the chairman of the sand-lime brick association division of the joint committee, read the report in extract and made verbal explanations. This report was supplemented by statements from President Duerr, who was also a member of the committee, and descriptions and suggestions by Prof. Woolson. Dr. Lazell exhibited, by means of charts, the actual results of the tests, and these showed by plotted lines the compression tests, the tensile strength and the behavior of the various classifications of brick when alternately treated with excessive heats and applications of cold water. There was no member of the convention who was not vitally interested in this important topic. The presentation of the in this important topic. The presentation of the report was as complete as possible to arrive at a full demonstration of the results obtained by the tests conducted at the laboratories of the Fire Underwriters

After all of the members present were certain that they thoroughly understood the exhibits and explana-tions, Chairman Jackson read the recommendations of the joint committee, which were offered for adop-tion of the National Association of Manufacturers of Sand-Lime Products in connection with the National Board of Fire Underwriters.

There recommendations were considered paragraph by paragraph, and finally were adopted as a whole thus taking the lead in the brick industry of America as the first step in the direction of arriving at a standard specification for brick. The recommenda-tions were equitable to all varieties of brick, some of them being very easy for any sand-lime brick to meet and others being very easy for any clay product in the shape of brick to meet.

These recommendations so endorsed were referred ek to the joint committee for its final action, and Chairman Jackson went on to explain that hereafter the members of the association will be expected to conform with these recommendations in the quality of brick that their plants turn out, so that insofar as the membership of this association is concerned, there will never be a brick of a lower grade than that described by the association standard, which is to be based for the future upon the recommendations agreed

upon with the National Board of Fire Underwriters.
One of the most to be desired objects of the association is hereby accomplished, and the future work of thorough standardization of the sand-lime brick as well as every other brick product that is offered in the markets is properly launched in such a way as to be the best guarantee of its ultimate fulfillment and the specifying of brick of unknown qualities will soon become a thing of the past. In the report of the joint committee was a further

commendation and explanation that the basis of e tests as first recommended by the Fire Underwriters was in some points too severe, and a new set of specifications for a future test of a more practical character was recommended, and to this the association gave its consideration and approbation so far as all future tests are concerned.

After this important work had been completed, the convention proceeded to elect officers for the convention.

After this important work had been completed, the convention proceeded to elect officers for the ensuing year, which resulted as follows: President, S. O. Gobo, Waltonville, Pa.; vice-president, H. M. Lippincott, Philadelphia; secretary, Fred K. Irvine, Chicago; treasurer, W. E. Plummer, Jr., Buffalo.

The auditing committee reported the books and accounts of the secretary and treasurer correct, and accounts of the secretary and treasurer correct, and

accounts of the secretary and treasurer correct, and recommended that an assessment of \$15.00 be made upon the entire membership for the purpose of paying the expenses of the Underwriters Laboratories in connection with the important comparative tests referred to above.

Every member promptly subscribed to the assessment before final adjournment, and there was in the atmosphere a feeling of confidence that the convention had accomplished great things, such as have never before existed in the history of this organ-

President Goho appointed the following executive committee: H. O. Duerr, Wilmington, Del., for the eastern district; H. P. Skeele, Savannah, Ga., for the southern district; John L. Jackson, Saginaw, Mich., for the central district; Clark Mellen, Colorado Springs, Colo., for the western district.

The convention adjourned size die at 2, 200 p. re-

The convention adjourned sine die at 2:30 p. m.

THE ATTENDANCE.

Hummelstorm Brownstone Co., Waltonville, Pa.; R. J. Walton, Allen G. Walton and S. O. Goho.
Colorado Brick and Artificial Stone Co., Colorado Springs, Colo.; Clark Mellen.
The Saginaw Sandstone Brick Co., Saginaw, Mich.; John L. Jackson and John C. Reinke.
Dyett Sand Lime Brick Co., 103 Park Avenue, New York; James R. Bateman and James H. Dyett.
Wilmington Granite Brick Co., Wilmington, N. C.; F. H. Smith.

Smith. e Silicate Brick Co., Ltd., Ottawa, Can.; J. A. Bull-

man. avannah Brick Works, 18 East Bryan Street, Savannah, Ga.: H. B. Skeele.

Norton City Silica Brick Co., Norton, Va.; E. G. Buck. Tri-City Sandstone Brick Co., Moline, Ill.; John L. Jack.

American Sand-Lime Brick Co., Chicago, Ill.; W. C. Vanneman.

Eltweed Pomeroy, Millburn, N. J.
Penbryn Brick Co., Bridgeton, N. J.; E. P. Bacon.
The Sand-Lime Brick Co., Philadelphia, Pa.; H. M. Lip.

Rockaway Brick Co., Rockaway, N. J.; E. M. Lowenthal. E. W. Lazell, official chemist, Philadelphia, Pa. The American Clay Machinery Co., Willoughby. Ohio; L. W. Penfield and W. J. Carmichael.

Buffalo Sandstone Brick Co., Buffalo, N. Y.; W. E. Plummer, Jr.

Red Wing Brick Co., Red Wing, Minn.; John J. Bovy. C. W. Lansing, Brick, Chicago, Ill. Rochester Composite Brick Co., Rochester, N. Y.; R. W. Holden.

Houen.

Prof. 1ra H. Woolson, Columbia University, New York.

Seminole Pressed Brick Co., Jacksonville, Fla.

Berg Machinery Manufacturing Co., Toronto, Can.; A.

Barg rg. gh Car Wheel and Axle Works, Catasauqua, Pa.; H.

Lehigh Car Wheel and Axle Works, Catasauqua, Pa.; D. C. Shields.
Lehigh Granite Brick Co., Allentown, Pa.; H. B. Weaver. Lehigh Granite Brick Co., Wilmington, Del.; H. O. Duerr. Composite Brick Co., Indianapolis, Ind.; Wm. G. Beatty. Fred K. Irvine, Rock Products, Chicago, Ill. International Sand, Lime Brick Co., New York, N. Y.; C. F. Kwiatkowski and Franklin Henshaw.
Schultz Bros., Brantford, Can.; G. C. Schultz, W. D. Schultz and J. A. Schultz.

Visit to the Local Plant.

The invitation of the Cranford Paving Company The invitation of the Cranford Paving Company to inspect their new sand-lime brick plant was an-nounced, and immediately upon adjournment the members, under the leadership of Franklin Henshaw, of the International Sand-Lime Brick and Machinery of the International Sand-Lime Brick and Machinery Company, and John Stewart, the manager of the brick department of the Cranford Paving Company, repaired to the cars, where they were taken to the plant, which was in full operation.

Here the party was met by Mr. Cranford, of the paving company, and J. S. Schaffer, superintendent of the plant. Mr. Kwiatkowski, the chief engineer of the company that designed and constructed the plant was also on head to explain its working.

of the company that designed and constructed the plant, was also on hand to explain its working.

The mixing of materials at this plant is done by means of a tube mill, which deposits the materials into a silo, which in turn feeds to a mixing device that brings the material out of the mixing machine on a belt conveyor, which feeds the prepared material to the press at such a speed as to have a charge always ready for the brick pockets.

The mages which is four world, was traving out.

The press, which is four mold, was turning out ick with the regular high speed of the machine, and the hardening cylinder was about two-thirds full. An examination of the materials showed that the and the hardening cylinder was about two-thirds full. An examination of the materials showed that the Potomae river sand being used at this plant is a splendid sand-lime brick material, and the stock of brick on hand in several tints, as well as clear white brick, showed that the Cranford Paving Company intend to take care of a very large business in the coming season. coming season.

coming season.

Alongside of the hardening cylinder and beside one of the unloading tracks of the plant is a wall constructed of sand-lime brick. It consists of a series of panels built of the brick and using various colored mortars, showing the different artistic effects, and there could hardly be devised a means of exhibiting to an architect such a forceful example of the artistic possibilities that can be accomplished by the use of sand-lime brick in a wall and which can be accomplished. sand-lime brick in a wall, and which can be secured by the use of no other material.

This plant is devoted exclusively to the manufacture of face brick of the highest quality, and the product on exhibition shows that the design has been well carried out.

well carried out.

Mr. Stewart, the manager, exhibited a pile of about 50,000 brick of a gray tint, which has recently been specified for some extensive building work for the Pennsylvania Railroad system. These brick are very attractive, being uniform in tone and of a light slate color, and when laid up with black mortar they give a very unique appearing wall, like nothing else that the writer has ever had the pleasure of seeing.

The plant is a first-class one in every particular, being framed of structural steel throughout, and covered with corrugated galvanized iron. The Cranford Paving Company has quite an extensive establish-

being framed of structural steel throughout, and covered with corrugated galvanized iron. The Cranford Paving Company has quite an extensive establishment, handling a large quantity of Portland cement, lime, asphalt, paving blocks and paving brick and other masons' supplies. Besides this they carry on an extensive contracting business, and are prepared to put their brick into practical construction to further beautify the city of Washington.

The sand comes from the Potomac River and is reclaimed by dredging. The dredge boats bring the sand directly to the plant, which is alongside the river. From the boats, it is conveyed to storage piles and from these storage piles the sand is taken directly

and from these storage piles the sand is taken directly into the plant, where it is dried, sifted, divided into sizes and then manufactured into sand-lime brick by the system of the International Sand-Lime Brick and Machinery Company.

J. C. Schaffer, who has charge of the mechanical

operation of the plant, is a young man who has had

operation of the plant, is a young man who has had no little experience in the brick business. He says his job is to keep the plant turning out brick, and from the stock piles in evidence, it would seem that Mr. Schaffer is accomplishing his purpose in life. At the time that the members of the convention were visiting at the Cranford plant, Mr. Kwiatkowski, with Mr. Henshaw, were arranging for a visit of the American Institute of Architects, who were holding a convention in the city at the same time. We afterward heard that these gentlemen were much impressed with what they saw at the brick plant, and doubtless these visits will have the effect of securing a great many more specifications for the beautiful white brick that can be secured at a reasonable price from no other material except the sand-lime process. The members of the convention appreciated the visit to the plant of the Cranford Paving Company, and have carried away high opinions of the product that they saw there and the possibilities that are to be found in their own operations.

The Washington convention was a pronounced success from every standpoint. The Sand-Lime Brick Association has established its reputation as a progressive body of manufacturers, who have fought through their difficulties and are now emerging on the broad plane of success, where the meed of prosperity that they have earned is within their grasp.

A ringing call was made by the new president for the members at the convention to cordially invite every sand-lime brick manufacturer who has not yet become a member of the association to immediately join, so as to participate in the benefits that the association is now prepared to hand out more than ever. There is no longer any question about the value of

join, so as to participate in the benefits that the association is now prepared to hand out more than ever. There is no longer any question about the value of the association's work. The things accomplished at the present convention were of such far-reaching importance that no manufacturer can afford to remain unaffiliated with the work that has established the industry and made it possible for operating upon a profitable basis for all future time.

White Brick Popular.

SAN FRANCISCO, CAL., Dec. 8.—C. F. Pratt, manager of the Golden Gate Brick Company, in expressing his approbation of the work of the National Association of manufacturers of Sand Lime Products,

"We have finished delivering for the present to the Southern Pacific Railroad for their \$500,000 hos-pital, but there is still another wing to be added to the building. When this building is completed, it will be the largest order for facing brick ever placed on the Pacific Coast, with one exception. This is the third order for our brick that we have delivered to the Southern Pacific Company."

Kept its Plant in Operation.

SAGINAW, MICH., Dec. 14.—The Saginaw Sandstone Brick Company held its annual meeting yesterday. Notwithstanding the business depression of the last year, this company has kept its plant in operation during the working season and the stock on hand is not excessive.

Henry B. Skeele Leases Plant.

SAVANNAH, GA., Dec. 16.—The plant of the Savannah Sand-Lime Brick Company, at Eden, has been leased by Henry B. Skeele, of Savannah, for a term of years, and will in a short while begin operations under the supervision of Mr. Skeele and his assistants. The fact that Mr. Skeele is to have charge of the property insures the success of the plant, as his experience in plants of this description has been extended. tended.

Lawrence Comerford, who was appointed receiver of the Savannah Sand-Lime Brick Company by the court, and who is one of the few experts in the United States in this product, will be the superintendent of the plant under Mr. Skeele's employment.

A beautiful \$50,000 church is being faced with the white brick of the Winchester Granite Brick Company, at Winchester, Ky.

The Columbia Silica Company, Portage, Wis., is contemplating equipping the plant for the manufacture of sand-lime brick. It is planned to have a plant of about twenty thousand brick daily capac-

"The Color Proposition" is one of the booklets issued by C. K. Williams & Co., of Easton, Pa. It gives a complete description of various colors and suggestions as to their application in cement and sand brick, sand lime brick and concrete blocks.



A New Firm With Old Heads.

The Marsh Company, whose offices are at 972 Old Colony Building, Chicago, while a comparatively new firm, is yet an old one for the reason that the main members of the firm are all well known to the trade, having been identified with the leading concerns in having been identified with the control of the com-defined for many years.

George C. Marsh, who is president of the com-



GEORGE C. MARSH, PRESIDENT, MARSH COMPANY, CHICAGO.

pany, has been identified with the crusher and mixer end of the business for so long that he might really be called one of the fathers of the industry. He is personally acquainted with probably more people in the crushed stone business than any man in it. For eight years he was manager of the crusher department of the Gates Iron Works and the Allis-Chalmers Company. He founded the Contractors Supply & Equipment Company and built this business up to the point where it did a business of three-quarters of a million dollars a year. This firm was recently absorbed by the T. L. Smith Company.

During the time that Mr. Marsh has been connected with the industry he has designed and built quite a number of the largest plants in the world. He built the plant for the erection of the sea wall at Galveston. He was one of the first men to realize the possibilities of the present time mixer. pany, has been identified with the crusher and mixer

the plant for the erection of the sea wall at Galveston. He was one of the first men to realize the possibilities of the present time mixer.

John M. Trevor, the assistant manager of the business and the manager of the crusher department, was formerly with the Allis-Chalmers Company and later on with the Contractors Supply & Equipment Company. He is thoroughly acquainted with the trade and is one of the best posted men in the business.

The Marsh Company will handle a full line of concrete machinery and contractors' equipment. They will make a specialty of designing concrete mixing and crushed stone plants and will furnish the plants complete, including the mixers, crushers, acreens, elevators and conveying machinery, everything in fact about a plant. They have an expert designer, who will take pleasure in designing a plant for any character of quarry and for any sized output.

The Marsh Company are the general agents for the Kennedy Gyratory Crusher. In designing the Kennedy crusher strength and rigidity have been kept construction is especially selected to suit the particular work for which it is intended. All of the

iron, steel, zinc and babbitt metal are subjected to a chemical and physical test to insure the highest degree of efficiency. All parts are made to gauge and template to insure interchangeability. By this method spare parts will fit as accurately as those originally composing the completed machine.

composing the completed machine.

Years of practical experience enable the manufacturers of this crusher to so distribute the metal in the design to secure the greatest efficiency as well as the greatest strength. One of the main points of this crusher is the fact that it has a larger feeding opening the strength.

crusher is the fact that it has a larger feeding opening than any other type of gyratory crusher.

The spider of the Kennedy crusher is a great improvement, inasmuch as the ring which forms the inner circle of the hopper does not project inwardly over the top of the concaves, making it possible to remove the concaves without first lifting off the spider, which is a decided advantage. The receiving opening has had due consideration, strength and rigidity having been considered and no sacrifices having been made for cheap construction or talking points. A piece of rock that will pass into the head and concaves will also pass under the arms of the points. A piece of rock that will pass into the head and concaves will also pass under the arms of the spider. The bottom of the spider is cast in a continuous ring, which encircles the entire top shell of the machine, and forms the inner circle of the hopper, which allows the stone to slide unobstructed into the crusher.

which allows the stone to slide unobstructed into the crusher.

The main shaft is suspended in the spider by means of a steel sleeve. On the inner side of this sleeve is cut a heavy, square thread, in which is screwed the adjusting nut. This nut supports the suspension ring, which is made of steel and rigidly fastened to the top of the main shaft, which is thus supported and may be adjusted vertically. The suspension ring is kept in place by a locking key, but it can be easily removed when desired. There is a steel bushing against which the suspension ring bears, which protects the thread from injury. This vertical adjustment of the supporting nut, which will change the fulerum an amount equal to the adjustment of the mainshaft, will slightly change the inclination of the shaft. This change in inclination is provided for by the ball and socket eccentric. It has a greater range of adjustment than any other gyratory crusher.

The advantage of a ball and socket eccentric bearing in a gyratory crusher is even greater than in a ball and socket pillow block for shafting as compared to a rigid pillow block. The conditions under which the main shaft of a gyratory crusher works in breaking stone or ore are those of a lever with the load applied between the fulcrum and the power, and it is constantly deflected from a straight line, therefore the advantage of ball and socket bearing at the place where the power is applied is very apparent. A rigid eccentric cannot be used without undue strain, friction and an excessive amount of power.

The eccentric and eccentric sleeve run in a bath of oil. Provision is made for keeping the level of the

The eccentric and eccentric sleeve run in a bath of oil. Provision is made for keeping the level of the oil always above the working parts and a plug is provided for drawing off any sediment that accumulates. The eccentric in the Kennedy crusher has a greater area of contact bearing than any other type of gyratory crusher; this insures the greatest amount



THE KENNEDY CRUSHER SOLD BY THE MARSH COMPANY, CHICAGO.

of wear with the least amount of attention. of wear with the least amount of attention. The eccentric sleeve is made in two parts and held together by bolts at top and bottom; it is encircled at the top by the bevel gear hub, which extends well downward. The eccentric is enclosed in a heavy cast-

downward. The eccentric is enclosed in a heavy casting, steel lined, which extends up to the hub of the bevel gear, so that the working parts are dust-proof and run in a bath of oil, the most perfectly dust-proof and lubricated equipment on any gyratory crusher. This eccentric is peculiar to the Kennedy gyratory crusher and is fully protected by patents.

The Kennedy gyratory crusher is provided with two dust collars. Directly under the head is a single packed dust collar and above the eccentric there is a double packed dust collar. These make it impossible for dirt or dust to get in contact with the eccentric, a feature which will be appreciated by operators; for, as the dust gets into the eccentric bearing, causing it to wear, there is a loss of eccentricity, which means a reduction in capacity, amounting, annually, in many cases, to more than the entire cost of the machine. machine.

machine.

The counter shaft is equipped with a special long bearing next to the gear and an outboard bearing to eliminate undue strain. There is a large reservoir cast under the journals and the oil is fed from it by chain, ring, or wick oilers, so as to give perfect lubrication.

cation.

The Marsh Company will carry a full line of con-



JOHN M. TREVOR, ASSISTANT MANAGER OF THE MARSH COMPANY.

tractors' wheelbarrows, especially designed for this character of work. They are also the exclusive agents, having considerable territory, for the complete line of concrete block machinery manufactured by the Ideal Concrete Machinery Company, of South Bend,

Expansion Bolts.

Expansion Bolts.

"Expansion Bolts" is the name used to designate the various devices for fastening fixtures to hard material, such as stone, brickwork, concrete, etc.

One would naturally suppose that an expansion bolt is a bolt that expands, such as a bolt split or slotted at the end, which is expanded by a wedge forced into the bolt by coming in contact with the bottom of a hole when the bolt is driven down into the hole. Almost without exception the so-called expansion bolt is not a bolt which expands, but a device which is more properly called an anchor and is expanded by a bolt or screw being inserted and revolved in it.

There are at the present day more than a dozen different expansion anchors (expansion bolts) on the market, most of which are patented and have merits which are proved by their use. They, however, vary as to price, owing to the intricate expansive parts of some, and also vary as to the size of hole required for inserting them. They are more properly classed as:

erly classed as: Screw anchors, used with the common standard wood screw and are made to use with screws of all

Lag screw anchors, for use with lag screws of any standard size and pitch of thread. Machine screw bolt anchors, which are threaded

for the standard machine bolts.

Concrete expansion anchors, which are embedded in green concrete and are held in place by the set-ting or hardening of the concrete around them and

ting or hardening of the concrete around them and are expanded by inserting lag screws, or other screws for which the anchor is especially designed.

Concrete workers, electricians, plumbers, steamfitters, telephone companies, metal workers and many other trades are required to use the expansion anchor in installing their work. It is therefore advantageous to all of these trades to obtain for their work the article which makes the best appearance as well as the most secure fastening with the smallest amount of labor to install and cost of obtaining.



H. Farrington, 45 Broadway, New York City, has invented and is manufacturing and selling the Farrington expansion bolts or anchors, and the principle employed by him is so simple that it would be difficult to find a device which can be sold at so low a cost and yet have so great a holding power and neat appearance. pearance.

and yet have so great a holding power and neat appearance.

The Farrington expansion anchors are simply a coil of soft brass or iron wire enclosed by a brass or galvanized iron jacket. When these anchors are used with a common wood screw, the expansion is accomplished by the taper of the screw either at the point or where the thread of the screw tapers into the shank, the coil being smaller than the threaded portion of the screw in the first case, and smaller than the shank of the screw in the latter case.

When lag screws are used, the coil is wound on a taper, which makes the interior of the coil tapered. The coil is then ground down to a uniform diameter on the outside. When the lag screw is inserted the coil is therefore expanded and the expansion increases toward the bottom of the anchor in proportion to the distance, the lag screw enters the coil. The illustrations shown here are screw anchors expanded by a standard wood screw. These anchors are made in five sizes and are adapted to use with screws from No. 4 to No. 29 targes. five sizes and are adapted to use with screws from No. 4 to No. 22 gauge.

In our last issue, we gave a full description of the R. D. Nuttall Company, newly designed flexible insulated coupling, with half-tone illustrations showing interior view of this coupling, and also view of the coupling set up. Inadvertently, under the cuts, the word gear was used instead of coupling, but we sincerely trust the article itself was read closely, as it is of interest to the trade, and if so, every one must know that these cuts illustrated their flexible coupling.

The C. O. Bartlett & Snow Company, of Cleveland, O., have just issued catalogue No. 27. The principal line covered in this is screening machinery. Various illustrations showing screening as well as conveying devices are shown. These are particularly interesting to producers of cement, crushed stone, lime, sand or crushed.



The sturtevant Mill Company, of Boston, Mass., has just patented a new grinding mill. They have given us the following description of it:

given us the following description of it:

Iron mills have undergone a series of failures and have been displaced, one by one, by improved machines, until today the vertical ring and roller mill is acknowledged to be the standard, for the reason that it turns out a maximum amount of material with minimum power, costs hardly anything for repair, and, in fact is a most satisfactory device.

This form of mill has the advantage of taking the rock direct from the breaker in 114 inch or smaller.

This form of mill has the advantage of taking the rock direct from the breaker in 1½-inch or smaller size and no matter how hard, will pulvertize same to any required fineness. It is not, however, a direct finishing machine, for the material, as it is discharged from the mill, passes into the elevator and over a Newaygo screen, which takes out the fines, the oversize, or coarser material, passing back to the mill

for regrinding.

Mills of this class consist of a massive ring revolved Mills of this class consist of a massive ring revolved vertically, having a coneave inner face. The convex rolls are strongly pressed by springs against this concave and forced to run over and crush any substance placed on the coneave track. Material is held on the track by centrifugal force, generated by the ring's rotations and is crushed off of both sides of the coneave track by the action of the convex roll

Mhen at work, the concave of the revolving track is covered with a thick layer (about an inch) of material fed thereon to be crushed and ground. A naked track is not exposed to the roll faces. Rock is crushed down upon itself (between anvil ring and hammer roll) producing maximum fines with least wear. There is no rub in good machines. The mechanisms all roll; it is only the material that rubs upon itself, and is

to this extent self-reducing.

The spring-pressed rolls are adjusted to crush at about 20,000 pounds (more or less, as is found effective). Elastically pressed rolls easily pass over iron or uncrushable substances with shocks so completely cushioned that crystallization or breakage is prevented.

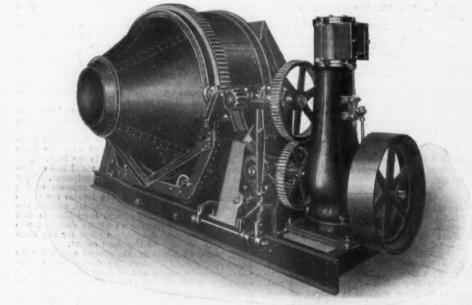
A new ring and three rolls make an old mill new if it is of a kind that has no shields, which in some mills are needed to keep the ring track running in

milis are needed to keep the ring track running in place.

Noiseless, dustless—such are the points generally claimed, but the Sturtevant Mill Company claims much more for its ring-roll mills and for the following good reasons, which users appreciate:

The ring of a Sturtevant mill is bolted to a massive head, revolved at about 75 revolutions per minute by its horizontal shaft. This ring is not loose and cannot "wobble." It runs with perfect truth and steadiness and therefore requires no shields, which are needed in some other mills to prevent the loose ring from wobbling away from the three rolls. Shields are objectionable—not only because they are wearing parts, but because they rub whenever they touch the loose ring to keep it in place, and thus act as brakes, resisting free revolution. Power is uselessly consumed by the shields. Having no shields to wear out, an old Sturtevant runs just as well as a new one. The Sturtevant steel ring costs only one-third as

The Sturtevant steel ring costs only one-third as much as the heavy loose ring of other mills, because the massive head lends ample strength to this lighter



CONCRETE MIXER MANUFACTURED BY THE MARSH COMPANY.

Also a Sturtevant ring may be removed and replaced in a few minutes, because the ring is per-fectly accessible. A ring is said by users to fre-quently last two, and on some materials is reported endure even for three years before requiring replacement.

An important improvement which distinguishes Sturtevant mills is the open door. The whole front opens like the massive door of a safe and swings the rolls and all their parts entirely outside of the mill, exposing the whole interior. The ring (R) which is the only working part left inside, can then be quickly reached for examination or replacement. When the door closes it swings the rolls with all their parts into the interior space of the ring (R), and then all the rolls can be equally pressed (by one screw on the outside of the door) as strongly as is needed to crush any material placed on the ring. The ring (R) discharges its rock on both sides of the concave track. The three rolls (A. B. C) are supported with An important improvement which distinguishes

The three rolls (A, B, C) are supported with abundant strength by the massive door (D). Each roll is swung into immense elastic crushing pressure by its spring-actuated steel bell lever. The comparative strength of a Sturtevant mill is shown by its steel material and weight, which greatly exceeds that of any other mill, and assures less vibration.

The rolls (A, B, C) may be held away from the ring (R) when the ring runs empty. This is a considerable advantage because the naked surface of ring and rolls would otherwise at this time pound and injure each other, as they do in other mills. These also make no noise.

The door is as easily swung as the doors of a massive safe.

massive safe.

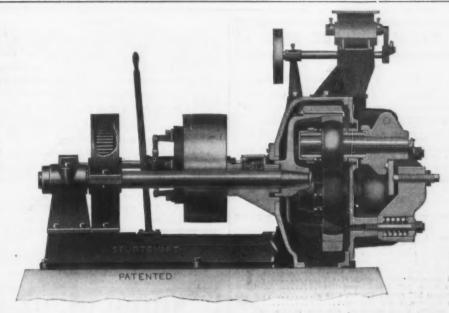
Substances to be ground are fed by the automatic feeder to the middle of the revolving concave of the ring (R) by way of the chute (S). The rolls (all set up by one adjusting serew on the outside of the door to give the required crushing pressure) roll over and crush out anything on the track, and finally force the fines off of both sides of the track. Such simple and smooth roll and ring action has never before been seen, because the Sturtevant ring runs in a perfectly unvarying vertical plane. The track being perfect, the rolls follow perfectly. Because the rolls cannot touch the ring, protected as its face is by the (one inch) thick layer of material on it, wear is almost nil. almost nil.

almost nil.

The layer of material on the Sturtevant concave ring is as thick as in any other grinder and is held thereon more securely by centrifugal force, not only because the ring is much wider than in other mills of equal size, but principally because the ring does not wobble and shake off its load. Rock drops from the Sturtevant ring's track by being crushed off, therefore a less amount of coarse tailings passes over and crushes the coarsest material just as it is delivered by the chute (S). The ring acts like an anvil and each roll more or less like a hammer. The other rolls follow with similar action.

As there is a constant feed while the mill is at

As there is a constant feed while the mill is at work, of course and partly reduced material, so there is a constant drop of finer material crushed off of both sides of the ring by the rolls. This escapes, as in all mills of this class, to the bottom of the case,



SHOWING WORKING PRINCIPLE OF THE RING ROLL MILL.

from which it is taken to a Newaygo screen which removes the finished product. The tailings, separated by this most effective of all screens, are returned to the ring (with fresh feed) for further reduction.

Attention is again called to the unusual width of



DETAIL OF THE THREE ROLLS IN THE RING.

the Sturtevant ring's concave and its obvious effect in reducing the proportion of tailings to be returned for regrinding.

For obvious reasons, the Sturtevant ring, running in perfect truth with its rollers, requires less power

- Later 2 2 2

than the loose wobbling ring of other mills which have shields that really brake them. A loose ring is so seldom, in the right path that but for its rub against the shields the ring in some instances would wobble away from the rolls.

Much prejudice, seemingly well-founded, long hindered the introduction of mills of this class that do not finish at ouce, but require that the oversize be screened out and returned for further action, but the durability of the few wearing parts of a vertical ringroll mill, and its large and steady output of fines, and the reduced horse-power required, when compared with any other grinder, soon demonstrated to users, remarkable merits.

A Sturtevant mill has only one driving held. Two

A Sturtevant mill has only one driving belt. Two belts can never be kept to pull equally and are clumsy contrivances. Double costs and wear do not recommend them. Its driving pulley is not overhang. Sturtevant mills are driven by friction clutch pulley. Its lever starts and stops this single belt machine by the simplest of all movements.

The convex-faced rolls (A, B, C) of Sturtevant mills have only one-half the number of bearing parts of other designs. These also are larger and perfectly secured from dust. These bearings always run cool. The Sturtevant mill feeder (F) is simple and automatic. Sturtevant bearings are clean, because no lubricant is wasted, and therefore less than half as much is used. No other vertical view and vall mill. much is used. No other vertical ring and roll mill requires so little oil or is so effectively lubricated.

requires so little oil or is so effectively lubricated.

Assuming that ring rotations and roll pressures are correctly adjusted, the width of ring in all nills of this class controls absolutely the amount of material crushed by the rolls. A wide ring produces the largest proportion of fines, because a smaller proportion of unreduced material escapes the action of the rolls by being forced off the ring. A steady running ring shakes off nothing. Where least unreduced material drops into the case, less work remains to be done by the screen and elevator.

A notable feature of Sturrevent ring-roll mills in

A notable feature of Sturtevant ring-roll mills is

A notable feature of Sturtevant ring-roll mills is casy running. A No. 1 mill recently tested grinding Portland cement clinker in a great plant, and running alongside of a large number of loose ring and roll mills, gave the following results: Power used running empty, one horsepower; power used when doing maximum work, eight and one-half horsepower. These figures do not include the power required by the elevator or separating screen. Needless to say the Sturtevant ring-roll mill is appreciated. The following suggest good reasons for its superiority:

The Sturtevant ring runs in a vertical plane with perfect accuracy and drives all its rolls with equal power. They run on the ring track with absolute truth. The loose rings at the above cement works are hard to drive, because they never run true, and as the ring departs from accuracy, its over-driving roll pulls it farther out of line, because the driving roll's course is then more or less across the ring; thus a measure of power is lost. Also a single roll that drives (by friction) a loose ring, slips and then further driving power is lost. Also with these loose rings, power is lost whenever the loose ring is restrained from running sideways by rubbing against one of the preventive shields, used at this work, to check the skidding of the loose ring and to force it back into proper position.



STURTEVANT OPEN DOOR RING ROLL MILL.

MACHINERY FOR SALE

FOR SALE.

Wood fiber machine in first-class order; also duplicate repair parts, including extra set of saws.

Address BOX 28, care ROCK PRODUCTS.

ENGINES AND BOILERS FOR SALE.

Engines-Corliss, Automatic and Throttling, all sizes from 1 to 500 H. P.

from 1 to 500 H. P.
Boilers—Horizontal, Portable and Vertical, all sizes
from 1 to 200 H. P.
Pumps, Heaters, Tanks, Sawmill and General Machinery.
Write for our prices on your requirements.

THE RANDLE MACHINERY CO., St., Cincinnati, O. 1745 Powers St.,

FOR SALE.

Lidgerwood, 30 H. P., No. 72 holst 7	50
	00
Little Giant 1 yd. traction shovel 2.6	50
Hayward % yd. orange peel bucket 8	75
	75
New 1 yd. clam shell bucket 8	75
Vulcan S-ton, 24" gauge locomotive 1,2	50
60 Western 24" gauge, 11/4 yd. cars at	30
45-ton Bucyrus, 3 sets engines	00
Road rollers, stone crushers, concrete mixers, etc.	
We can save you money. WILLIS SHAW CO., Chicago, Ill.	

CRUSHER FOR SALE.

Gates No. 4 Gyratory, in fine condition. Cheap. R. P., BOX 2, Sta. A., Cincinnati, O.

ENGINE AND BOILER BARGAINS FOR CASH:

CORLISS ENGINES:

- 1-18x36 lefthand Lane & Bodley.
- 1-18x42 Rankin & Fritsch.
- -24x30 Clark heavy duty.
- 1-26x30 Clark heavy duty.

AUTOMATIC ENGINES FROM 10 TO 300 H. P.

- 1-13x14 Brownell self contained 20th Century type.
- -15x16 Ball high speed. Practically new.

BOILERS:

- 20-72x18 high pressure type, buttstrapped 125-lbs. steam pressure (tubular)
- -72x18 tubular full flush front, 100lbs. steam pressure. 2—250 H. P. Heine water tube 145-lbs.
- steam pressure.

Cleveland Belting & Machinery Co.

1922 Scranton Road

FOR SALE.

20-ton overhead traveler, 38-foot span; electric power or rope drive. 135 feet track; strictly first-class. Also 20-ton stiff leg stone yard and quarry derrick, Scoville make. 50-foot boom, double engines on mast, revolves full circle either direction. Fine condition.
WILLIS SHAW, 171 La Salle St., Chicago.

EMPLOYMENT WANTED

POSITION WANTED.

An experienced traveling salesman wants position. Wall plaster, cement line, etc.

Address E. A. G., care ROCK PRODUCTS.

A SALES MANAGER.

of ten years' experience in cement business desires to make a change; best of references.

Address G. B., care Rock Products.

WANTED-POSITION.

by engineer of 25 years' experience in construction and operation of stone crushing plants; familiar with all the details of the business; references.

Address BOX 75, care ROCK PRODUCTS.

MATERIAL FOR SALE

FOR SALE.

Large deposit of limestone and clay on railroad. Good opportunity for cement plant. Address HARRY M. FARNAM, No. Adams, Mass.

WOULD YOU

Have back the little dinky engines, the horse and mule cars, the old stoves and lamps, and no telephones? No. We say NO.

Why then do you try to buy and retain a crusher of the transfer of the lamb of the lamb

the law and gyratory type that was constructed twenty years ago and was not improved? We beg to introduce

wenty years ago and was not improved?

We beg to introduce you, herewith, to the UNIVERSAL CRUSHER, which is a machine lately invented and improved. It is the only up-to-date
Crusher for grinding or crushing any hard material
to any desired size, whether from 1 to 40 megh, or to
material passing 1-16" to 3½" ring, and larger.

The machine is simplicity itself. It has only Four
bearings, therefore, it has LESS friction, requires
LESS power, is LIGHTER in weight (which means
LESS freight), than any other machine on the market.
It can be operated as soon as it is installed and belted
to power. This means LESS cost for installation.

We build machines with a capacity from 100 lbs.
up to 50 tons per hour, and our prices will suit everybody.

Now, you are informed of the UNIVERSAL

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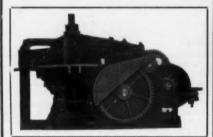
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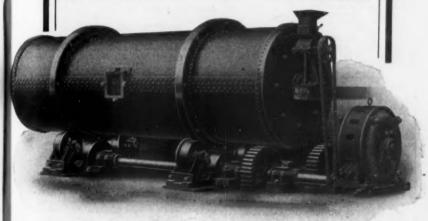
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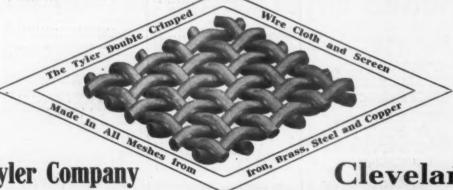
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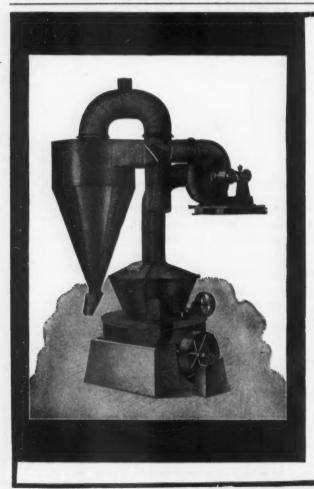
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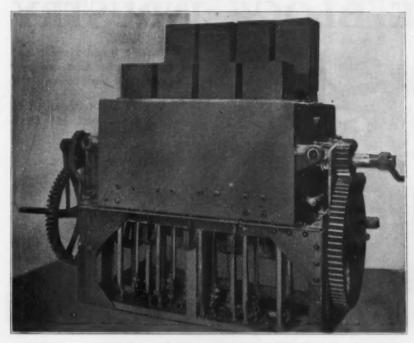
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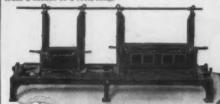
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THE PERFECTION POWER BLOCK MACHINE is the only Power Block Machine on the market, making a Hollow Concrete Building Block under Heavy Pressure

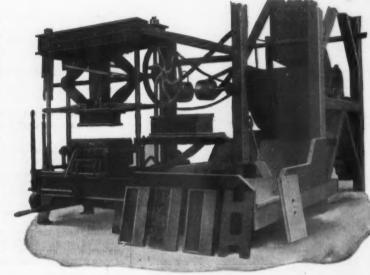
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Don't fuss and lose time with complicated mixers. Let us tell you about this simple, strong machine.

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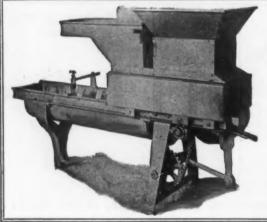
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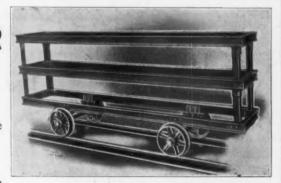
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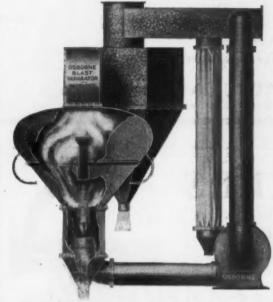
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(TESTIMONIAL)

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ALUMINUM COMPANY OF AMERICA
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The most efficient and economical separator ever placed on the market for separating fines from tailings, or for screening all classes of pulverulent material.

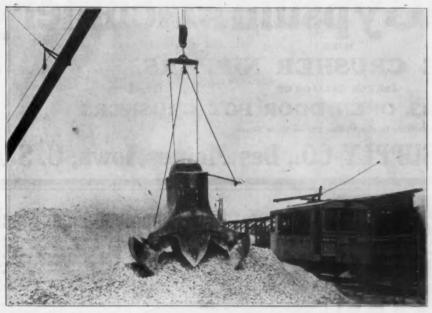
The degree of fineness of the material blown into the collector may be regulated with the utmost exactness, and the machine will handle a class of material as fine as 200 mesh.

Material containing 10 to 12 per cent. of moisture is handled without any trouble. These machines are particularly well suited to the handling of abrasive material, such as cement, phosphate rock, limestone, barites, etc.

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Our bucket on the derrick shown in the picture handled as high as 600 tons of crushed stone in ten hours.

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The Only Automatically Lubricated Gyratory Crusher

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Simple Construction (Saving)
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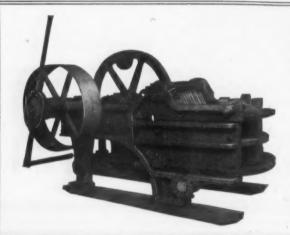
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Finest Line Gypsum Machinery

KETTLE CRUSHER NIPPERS

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MOGUL NIPPERS. OPEN DOOR POT CRUSHERS

Best Mills in the United States Have Them

DES MOINES MFG. & SUPPLY CO., Des Moines, Iowa, U. S. A.

FARREL ORE AND ROCK

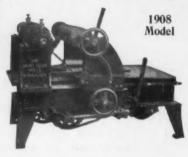
USED IN ALL PARTS OF THE WORLD-LARGE RECEIVING CAPACITY-SPECIALLY DESIGNED AND CONSTRUCTED FOR HARDEST KIND OF WORK

COMPLETE CRUSHING PLANTS OUR SPECIALTY

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EARLE C. BACON, ENGINEER.

The Shuart-Fuller Improved Fiber Machine



Has an automatic, proportional, increasing feed, which keeps grade of fiber uniform from start to finish, and holds machine to highest possible rate of production for the grade of fiber and number of saws. Does not begin with fiber and end with dust, nor fall off in rate of production on each log, from 40 to 80 per cent as do the ordinary non-increasing feed machines. Works logs up to 24x24 inches. No royalty string attach ed to sale. Pay no attention to mis representations of our competitors, but write for descriptive circular and terms to

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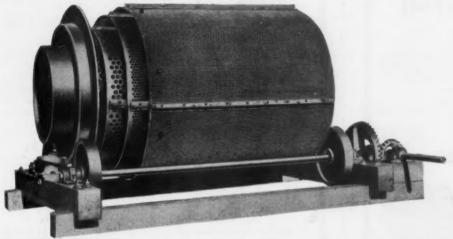
THE SHUART-FULLER CO., Elyria, Ohlo.

Gentlemen:—We are just in receipt of advice from our New Mexico plant wherein they state that the Wood Fiber Machine recently shipped by you is doing all that we have asked of it and running very fine

ACME CEMENT PLASTER CO.

By Jas. R. Dougan .Sect.

JOHN O'LAUGHLIN'S SCREEN



The advantages of these screens are described in detail in a circular which WE WILL MAIL TO ANY ADDRESS. Mr. John O'Laughlin, the inventor, has designed many notable improvements in rock-drilling, quarrying, crushing and screening machinery, and uses these improved screens in his own crushing plants, which others have declared "to be the most perfect in existence in every detail." The O'Laughlin Screen is an important factor in the most modern and perfect stone-crushing plant.

made solely by Johnston & Chapman is the

ONLY SCREEN

on the market for wide-awake quarry-men and miners, who want to separate crushed granite, limestone or other minerals, gravel, sand, coal or coke. It will soon earn its cost in saving of repairs, and maintenance, and reduced power, and will do more and cleaner work than any other cylindrical screen of like area. No one can afford to keep old traps in use when the O'Laughlin installed

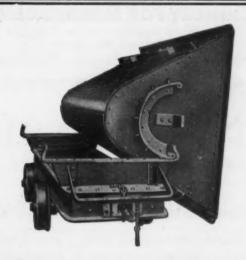
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will from the moment it starts give a better and larger product, and a big interest on your investment in continuous saving in cost of repairs, renewals, and power. For particulars, address:

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Perforators of Sheet Metals, Flat, Cylindrical, and Conical Perforated Screen Plates for Quarries, Mines, Reduction Works, Mills and all Industrial Purposes.



Rocker Dump Car For Quarries, Gravel Pitsand Concrete Work

We manufacture CARS of all styles and sizes. Also ELEVATOR BUCKETS, ELEVATORS, REVOLVING SCREENS, HOISTS, SKIPS.

If you need any of the above write us for prices; we can quote you the lowest and give you what you want.

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CRUSHERS FOR HARD OR SOFT ROCK

Capacities—One to 200 Tons per Hour Outputs—¼ Inch to 4 Inch

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and supply all kinds—no single design can do everything—get our catalogue and make an intelligent selection

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RAW MATERIAL GRINDERS

New Williams Universal

FOR TUBE MILL FEED



800 BARRELS 22 HOURS 95 PER CENT THROUGH 20 MESH HORSE POWER 40 TO 50

WE ALSO GRIND GYPSUM, LIME, COAL AND SHALE

Vulcanite Grinder

FOR ROLLER MILL FEED TAKES MATERIAL FROM GYRATORY, DIRECT

CAPACITY 20 TONS HOUR FINENESS & IN., & IN. AND & IN. HORSE POWER 40 to 45 1,300 MILLS NOW IN USE



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WORKS: ST. LOUIS, MO.

The

SALES OFFICE: D COLONY BLDG. CHICAGO

Williams Pat. Crusher & Pulverizer Co.

Seattle, Wash. 456 Empire Bldg.

Los Angeles, Cal., 1531 Maines Ave.

Modern Grinding Machinery

KOMINUTERS for Granulating TUBEMILLS for Pulverizing

Davidsen Tubernill especially adapted for Sand-Lime Brick Work

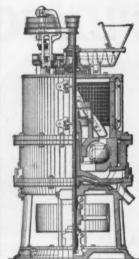
Silex Linings for Tubemills Best Quality Dana Flint Pebbles Forged Steel Balls

F. L. SMIDTH & CO.

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Fuller - Lehigh Pulverizer Mill

The Best Pulverizing Mill Manufactured

Exhaustive tests in all departments, in competition with the most approved grinding machines in use, have demonstrated the superiority of our machine.

OUR CLAIMS:

Greater Output Better Fineness Fewer Repairs Dustless

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With the four we are now ordering we will have in use 16 Fuller Mills in all, and I think you can hope to get orders from us within the very near future for quite as many more.

"We have to say for your Fuller Mill that it is unqualifiedly the best grinding device we have ever tried on our lime rock and eminently satisfactory to us."

"We are pulverizing with one Ball Mill and four Fuller Mills sufficient raw material to produce nearly 1200 barrels of clinkers per day, which record I believe can not be approached by any other mill on the market."

Lehigh Car, Wheel & Axle Works

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MACHINERY FOR MAKING CEMENT

Read What Our Customers Think of **Our Cement Machinery**



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Mr JS. Boul Gen Salva agust

Power and Mining Medowry Co.

Dear Sis: - Your Kilne, Conters, Angere; andon and Tube Wilk which we have installed in The frank of the Continental Portland Commet er are now in operation, and it gives us great pleasure to state tras we have not had a bot storing or a minustes delay from any machine.

your live of machinery as absolutely the but in Earth

Vary Repy your The J. L. Balluger Construction in



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Gable Bottom Car for Handling Heavy Material. Catalog 33.



Portable Switches in Stock. See catalog 33.

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PITTSBURG Union Bk. Bldg. are the most efficient means of handling your cement and concrete—Because

One man can do more work with an Industrial Car on a track than he can with a wheel barrow. More work can be done collectively—time and labor being reduced.

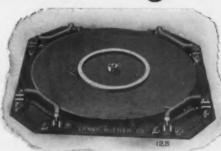
LARGE STOCK

of Industrial Cars and Track always on hand. We also build special ars Cand Track to meet individual requirements and can name attractive prices—Write for these and our booklet No. 17.

"Handling Stone and Concrete."



BOSTON 141 Milk St. CHICAGO Monadnock Bldg. BISBEE, ARIZ. P. O. Box 597 SAN FRANCISCO Balboa Bldg.



Light Wrought Iron Turntable. Catalog 33.



able Side Rocker Duine Car.

RETARDER Wood Fiber

THE OHIO and BINNS RETARDER CO. PORT CLINTON, OHIO

Reliable Stucco Retarder—Strong—Uniform in Strength— Duplicate power plant (electric and steam power) installed so as to preclude any possiblity of shut down and consequent shut down of mixers who depend upon us for their supply of Retarder. We have a capacity large enough to supply every retarder user in the U. S. and Canada, and some to spare for Europe. Our mills are fireproof in every particular. Write us for prices and information.

THE OHIO and BINNS RETARDER CO. PORT CLINTON, OHIO

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Eastwick Plaster Company

MANUFACTURERS OF GYPSUM PRODUCTS

WORKS EAST FALLS, PA

NEW YORK CITY, TRENTON, N.J.

CITY OFFICE BUILDERS' EXCHANGE

PHILADELPHIA Dec 14, 1908.

The Francis Publishing Co.,

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We desire to congratulate you upon the world-wide circulation of "Rock Products" and the great number of influential subscribers you have on your list.

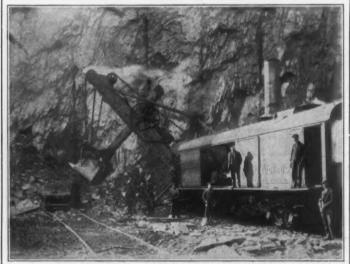
Since we started to advertise our process for manufacturing calcined plaster &c we have received inquiries from all parts of the U. S. and especially foreign countries, and have made some very valuable connections.

The results in the past certainly promise much for the future.

Yours very truly,

EASTWICK PLASTER CO.

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95-B Bucyrus Steam Shovel CEMENT ROCK

We Build Steam Shovels for Quarry Stripping, Cement Mining or Loading Crushed Stone

THE BUCYRUS CO. SOUTH MILWAUKEE, WIS.

Stucco Retarder

Strong Uniform Fine Ground

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We are the oldest Retarder firm in the United States, and above is our motto. New fire-proof plant and prompt service.

FREE SAMPLE ON REQUEST

Chemical Stucco Retarder Co.

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INCORPORATED 1895

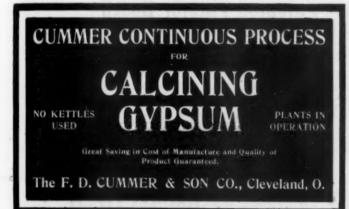
STUCCO—Lycoming Calcining Company

Garbutt, Monroe County, N. Y.

Enlarged, Re-equipped, Better and Larger than ever. Capacity, 250 tons per day. First Stucco mill built at Garbutt. Now located on two R. R. systems. Shipping facilities unsurpassed. Ten wall plaster Companies now using our Stucco exclusively, under contract. Write for price.

MAIN OFFICE.

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UNIFORM AND STRONG

Suitable for all kinds of Stucco and Plaster. Write for sample.

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PLAIN AND **ORNAMENTAL** PLASTERING

EQUAL IN QUALITY TO FOREIGN MAKES

MILLS AND QUARRIES:

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SPECIAL MACHINERY AND FORMULAS

FOR THE MANUFACTURE OF

WOOD FIBRE PLASTER, FIRE PROOFING AND KINDRED PRODUCTS

The Ohio Fibre Machinery Co.

J. W. VOGLESONG,

We furnish the latest improved fibre machine, (fully patented) also formulas, on a reasonable proposition. The strongest companies and oldest manufacturers are operating under my contracts.

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GENERAL MANAGER

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KING'S WINDSOR CEMEN FOR PLASTERING WALLS AND CEILINGS

Elastic in its nature, can be applied with 25 per cent less labor and has 12½ per cent more covering capacity than any other similar

- material -

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Tall 'em you saw it in ROCK PRODUCTS

BUILDERS' SUPPLY MAKE TWO PROFITS!



Both Manufacture and Sell Rader Patented Plaster Board

If you are selling plaster boards you are making one profit. Why not manufacture them and make both manufacturers' and dealers' profits? With

RADER'S PATENTED MOULDING TABLES

you can manufacture the best plaster boards on the market and at less cost than the largest manufacturers, enabling you to compete with any brand, both in quality and price.

PLASTER BOARDS

are rapidly displacing all kinds of lath, being fire and vermin proof, lower in price, more rapid and economical in construction, stronger and more durable.

RADER'S PATENTED PLASTER BOARDS

made only with Rader's Patented Moulding Tables are the most satisfactory now on the market. Cannot be broken as can others, thereby eliminating all risk of loss by breakage in transportation or general rough handling. They have to be sawed in two. Each side of the board is adapted to different purposes thus having a double advantage over any other make. Three plants are now in operation to meet a growing demand.

A COMPLETE PLANT CAN BE INSTALLED AT A SMALL COST as the Rader apparatus is licensed at a very low price and only a very small space is required for its operation. The device makes boards from to 1 inch in thickness.

TERRITORY AND RIGHTS CAN BE LICENSED

with the exception of the New England and Middle Atlantic states which have already been secured by one of the largest plaster manufacturing companies in the East.

Write us for Samples and Further Information.

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PLYMOUTH CEMENT

WOOD FIBER PLASTER

The Brand that's Made from Pure Gypsum Rock.

WRITE US FOR PRICES AND ADVERTISING MATTER.

Plymouth Gypsum Co.

Fort Dodge, Iowa

Plaster! Plaster!

Iowa Hard Plaster Co.

HARD BY NAME. HARD BY NATURE. HARD TO BEAT. NOT HARD TO GET.

Iowa Hard Plaster Co. FT. DODGE

THE

"INDEPENDENT"

Is Manufactured Only by

American Independent Gypsum Co. Fort Dodge, Iowa

UP-TO-THE-MINUTE PLASTER MAKERS

Works Fine. Try It You Will Like It

NIAGARA GYPSUM CO.

MANUFACTURERS OF

GYPSUM PRODUCTS

MINES and MILLS GENERAL OFFICES
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Our electrically equipped mines and mills are now in operation with a capacity of 300 tons per day, and we assure you of prompt service.



We Manufacture Stucco, Neat Cement Plaster, Ready

Finish, Wood Fibre Plaster, Finishing Plaster, Sanded Wall Plaster, Crushed Rock, Land Plaster.



Quality Strength Capacity



MODERN PLASTER



ODERATE PRICE



Wall

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Fame



Here's wishing every Material Dealer, Plus:

The Prestige, Patronage and Profit enjoyed by our Dealers from handling the reputable and meritorious plaster products of the U. S. G. Co.—such as, for instance, its various brands and kinds [White, Gray, Neat, Prepared, Wood Fibre, etc.] of

U. S. G. Hard Plasters, made from Pure Rock Gypsum; and—Sackett Plaster Board, Fireproof, "Instead of Lath"; Gypsinite, Fireproof, in place of wooden studding; Universal, "the No Lime Plaster Finish"; U. S. G. Hollow Tile, the light, economical and better Fireproof Partition Block; Stuccos, Moldings, Hydrated Lime, and Plaster Products Generally;

And Plus—the general satisfaction of doing business with one large, responsible House that is amply able to cover every trade want in plastering materials;

And Plus—the Co-operation, the Prompt Shipments, the Uniform Reliability, the Advertising Assistance, and the fullest exemplification we know how of "the square deal policy"—in short, the Superior Service of this House of Progress:

Plus all this, we wish every Material Dealer

H Merry Christmas and H Happy, Prosperous New Year! United States Gypsum Company

NEW YORK

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CHICAGO

MINNEAPOLIS

SAN FRANCISCO

INSTEAD

FIREPROOF AND ECONOMICAL

SACKETT PLASTER BOARDS have been successfully used since 1891 in thousands of buildings of all classes, including small cottages, prominent hotels, costly residences, churches and theaters.

Walls and ceilings of Sackett Plaster Boards will be DRY AND READY IN HALF THE TIME required when lath is used, as less than half the quantity

of water is needed.

Less moisture means less damage from warped and twisted trim and

Their superior insulating qualities make warmer houses with less fuel. The first cost is no more than good work on wood lath, and less than on metal lath

Sackett Plaster Board is an efficient and economical FIREPROOFING not only for walls but between floors, and for protecting exposed wooden surfaces in mills, warehouses and industrial structures. It is also used extensively instead of lumber as outside sheathing under weather boards.

Sackett Plaster Board comes in sheets or slabs 32x36 inches ready to be nailed direct to the studding, furring or beams.

For all kinds of Buildings its use is ideal. It speeds construction; it lessens building cost; it reduces fixed charges for insurance; it makes fire resisting walls and ceilings, and gives absolute satisfaction.

Carried in stock by up-to-date building material dealers everywhere.

Booklet showing buildings all over the country where these boards have been successfully used with SAMPLES and name of nearest dealer furnished on application to any of the following General Distributors.

MINNEAPOLIS CHICAGO CLEVELAND

UNITED STATES GYPSUM CO. | GRAND RAPIDS PLASTER CO. | **GRAND RAPIDS, MICH**

SACKETT PLASTER BOARD CO.

17 BATTERY PLACE, NEW YORK CITY

HOTEL GRISWOLD, NEW LONDON-141 acres of Sackett Plaster Board used in its construction



Tell 'em you saw it in ROCK PRODUCTS.



The American Sandstone Brick Machinery Company,

SAGINAW, MICH.

DON'T confuse our practical system with the so-called Scientific Systems. We confine ourselves to the manufacture of machinery for making brick from sand and lime; installing the complete plant starting and operating at our expense until at least 100,000 brick are made before asking for a

Our Plants are installed under the sune vision of practical engineers who know how Sand-Lime Brick should be made, and can

be made.

We have practical plants running successfully, to show to prospective investors,

We are Not Scientists.

We produce results, because we are the eldest practical Sand-Lime engineering company deing business in the United States, and we dely contradiction. Incorporated April 1902,



with extra brick, on v

Improved Saginaw Rotary Presses as ing built right or left hand, with c for making face and fancy brick double pressure is exerted. Our brush does the work of one man, the plunger plates clean.

THE GENUINE

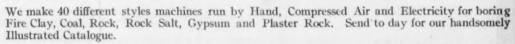
to buy any other than the Gandy Red Stitched Cotton Duck Belt for stone crushing or dressing. The same sharp dust that wears a leather belt down in a few months seems only to temple.

BELTING CO. BALTIMORE, MD

HOWELL'S Celebrated Ball Bearing Heavy Geared Post Drills

For boring anything that an Auger will penetrate.

Awarded Gold Medal, St. Louis.



HOWELL MINING DRILL CO., (ESTABLISHED 1878.)

PLYMOUTH, PA.,

A Tempered Steel Jaw Plate for Blake Type Crushers

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Canda Tempered Steel Crusher Jaw Plate Patented March 31, 1908

The Canda Tempered Steel Jaw Plate for Blake Crushers is composed of Forged and Rolled Chrome Steel Bars, cast-welded and also mechanically interlocked into a backing of tough steel-and the wearing face is tempered to extreme hardness. We are equipped to supply both corrugated and smooth face plates for all sizes and makes of Blake Crushers.

1 The Canda method of cast-welding forged and tempered steel bars into a mild and tough Steel Backing, is adapted also to the construction of Cone Heads for Gyratory Crushers, Segments for Corrugated Rolls, etc., etc. I Our products in this line are sold with our special guarantee that they will wear longer, give better satisfaction and, at our price, prove more economical than any others now on the market.

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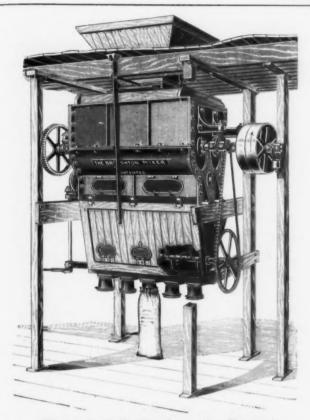
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The most thorough and efficient Mixers of Plaster, Cement and Dry Materials. Send for Circular.

W. D. DUNNING, Water St., Syracuse, N.Y.



Sand-Lime Brick Machinery

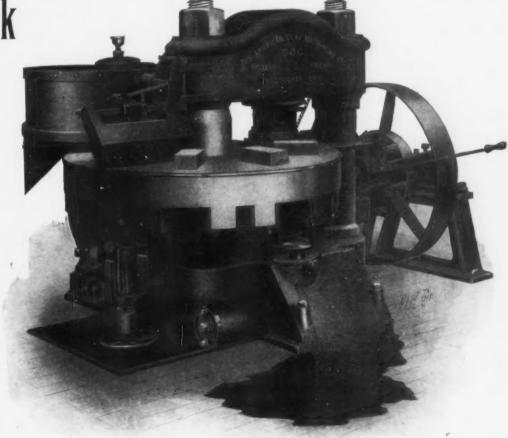
OUR Sand-Lime Brick Machinery is at least a little better than any other. We have testimonials to show it. We build it all in our own factory and are sure of its quality. We are the only firm doing this. We will design and equip your entire plant or will sell you parts of your equipment. Our catalog describing and illustrating our full line will be sent upon request.

We also build a full line of machinery and appliances for making Clay Products, Cement and Pottery, Dryers and Dryer Apparatus.

Everything we sell we make. We therefore know its quality to be right.

The American Clay Machinery Company

WILLOUGHBY, OHIO, U. S. A.





AN INTERESTING FACT CONCERN-ING CEMENT

It may not be generally known, but it is none the less true, that in all the notable engineering work in this country, such as the New York and Philadelphia subways, the Hudson River Tunnels, the great dams and reservoirs of the New York water supply system, the cement known as "GIANT" Portland was used. This was because of its uniformity, durability and strength. This celebrated cement is manufactured by the

American Cement Co. PHILADELPHIA

ARE YOU GOING TO BUILD?

No matter what kind of a structure you contemplate building, it will pay you to post yourself on the advantages of concrete construction made with

Daily Capacity

ATLAS

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ORTLAND CEMEN







A concrete building means protection from fire, vermin and decay. It is cool in summer and warm in winter; requires no paint or repairs, yet permits of pleasing architectural effects and color schemes. In most cases you will find concrete construction the least expensive in the beginning and in all cases the cheapest in the end.

The success of concrete construction depends largely on the quality of the cement used. ATLAS is the highest grade of Portland Cement manufactured.

This Company makes but one quality—the same for everybody.

Tell your architect to specify ATLAS.—Ask your dealer for it. You will know it by the Trade-Mark.

Building Books FREE on request. As a guide to prospective builders we have published the following books which will be sent FREE on receipt of postage. Concrete Country Residences. Postage 25 cents.

Concrete Cottages. Postage 1 cent. Concrete Construction about the Home and on the Farm. Postage 4 cents. Reinforced Concrete in Factory Construction. Postage 10 cents.

THE ATLAS PORTLAND CEMENT COMPANY

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30 Broad St., New York

Kennedy Gyratory Crusher

Largest Feed Openings—Greatest Capacity SIZE FOR SIZE OF ALL CRUSHERS

Tested Out
in
Trap Rock
for
One Year
Before
Offered
for Sale



Showing manner of dropping bottom for rebabblitting

Backed by
More
Special
Experience
in
Gyratory
Crushers
Than
Any Other

Only Gyratory Crusher with Ball and Socket Eccentric, insuring perfect alignment; increased capacity and durability.

Easiest and greatest scope of adjustment.

Many other improvements over other crushers.

Write us for catalog and full information

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PERFECTECON SEPARATOR

THE UNFOLDING METAL VIBRATING SCREEN
UNIVERSAL IN ANGLE, DRIVE, FEED AND ACCESS.
GREATER CAPACITY, LESS WEAR

60 SQ. FT. GIVES 25 PER CENT MORE SCREEN AREA WITH LESS FLOOR SPACE



NO RIGHTS

Made to Fit any Plant

NO LEFTS

THE MAXECON MILL

A Perfection of the Kent Principle for Cement Work

Greater Capacity

Less Horse Power

Greater Durability

Less Wear

Quieter Action

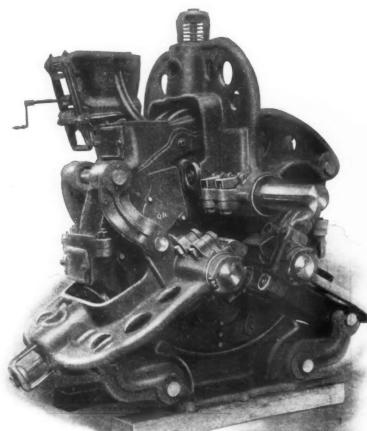
Easier Handling

Massive but Compact

Powerful but

Easy Running

Universal



Open Sides

Swinging Bearings

Removable Bushings

Integral Oil Wells

Perfect Dust Guards

Separate Wear Plates

Parallel Motion

Flexible Construction

Dustless

Noiseless

Single Drive

See if at Cement Show in Chicago, Feb. 18-24, 1909.

Maximum of Economy and Durability, and of Efficiency per Horse Power Solves Cement Grinding Proposition

ROLLING TOGGLE CRUSHERS

Sectional Jaw Faces Little Wear. **CUSHIONED CRUSHING ROLLS**

Yoked Bearings Prevent Heating Cive Parallel Roll Faces



Kent Mill Co.

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